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EDUCATION:

ITS PRINCIPLES AND PRACTICE.

EDUCATION

S PRINCIPLES AND PRACTICE

AS DEVELOPED BY

GEORGE COMBE
AUTHOR OF "THE CONSTITUTION OF MAN."

COLLATED AND EDITED
BY WILLIAM JOLLY
H.M. INSPECTOR OF SCHOOLS.

NOTE TO THE READER

London:
ACMILLAN AND CO.
1879.

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PREFACE.

GEORGE COMBE was one of the most enlightened and enthusiastic Educationists this country has produced. His views and labours, however, are little known to the present generation, and not least to the class for whom he did such eminent service. The story of his noble life has only been recently told; his educational opinions were chiefly conveyed in an evanescent form, necessary from the polemics of the time, and through a new and despised philosophy; and his works on education have been little accessible even to students of the subject. They deserve to be known, studied, and reduced to practice, and the present work is the first attempt to exhibit his contributions to education in a collective and systematic form. It has been deemed better, instead of merely reprinting the numerous pamphlets as they appeared, to classify the whole of the educational utterances scattered throughout his extensive works; so as to present as complete an exposition of his views on the wide educational field traversed by him as the materials would permit.

The chief work of the Editor, in addition to the selection and classification, for which he alone is responsible, has been to supply all notes required for the understanding of what was so much a part of the educational struggles of the day; to explain the continual references to a special technical philosophy; and to exhibit George Combe's connection with the various movements that characterised the educational revival, which began with the present century, and in which he took a most prominent part. The Editor has also attempted

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The Editor will be greatly obliged to readers for suggestions, and for the correction of errors unavoidable in a volume of such extent and variety.

He begs here publicly to convey his best acknowledgments to the many gentlemen, too numerous to mention—friends of education and of George Combe—who have so cordially and kindly assisted him in the preparation of the work.

This preparation, first prompted by gratitude for good received and a wish to enable others more easily to participate in the same, though very laborious, has been rewarded with the highest pleasure, insight, and impulse.

The book is sent forth to the world, with full confidence, as one of the best contributions ever made to the great cause of Education, certain ultimately, if not immediately, to take an eminent place in educational literature, and to do the highest service in what is of paramount importance to national and universal well-being—the Education of our Children.

INVERNESS, *January* 1879.

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,, 17, 1st line from top, *delete* [at beginning of line.
,, 212, 2nd line of notes, *for* "chap. iii." *read* "chap. iv."
last line of notes, *for* ditto. *read* ditto.
,, 289, *for* head title, *read* "The Order of Development of the Faculties."
,, 401, last line of side contents *for* "of" *read* "and."
,, 423, last line of notes *for* "121" *read* "123."
,, 470, 4th line from foot, *for* "Smidt's" *read* "Schmidt's."
,, 472, 10th line from foot, *for* "Erziehungs-und" *read* "Erziehungs- und."
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,, 613, 2nd last line of 1st note, *for* "Encyclopædia" *read* "Cyclopædia."
,, 635, last line of notes, *for* "4" *read* "p. xx."
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INTRODUCTION.

GEORGE COMBE AS AN EDUCATIONIST.

George Combe, Phrenologist and author of the "Constitution of Man," is better known than George Combe Educationist. To have written a philosophical work which has achieved a circulation of above 100,000 in Britain and more in America and the colonies, and has been translated into most European languages, and to have placed his name worthily beside those of the anatomists and philosophers Gall and Spurzheim, were distinction sufficient to have eclipsed any other. But light eclipsed is not extinguished. Great as has been George Combe's influence as a thinker and philosopher, his services to education have scarcely been less notable, and will be of enduring value. He exercised great influence on the education of his time, and he is certain to exercise more on that of the future, in enlightening, broadening and raising it, for his views are still far in advance of the age: and it may be predicted with certainty, that George Combe will yet take a high position, not only as a pioneer, but as a permanent power in education; from the excellence of his ideas, their scientific basis, their clear and philosophic exposition, and their important practical bearing on the progress of mankind. This is a strong position to claim for a man whose name is seldom mentioned in the abundant talk on education at the present time, but it would seem to be the simple truth, which this re-issue of his contributions to education will, it is hoped, go far to maintain, and which the future will certainly endorse.

George Combe's great aim was to benefit his fellow men individually and socially. To this high end, he devoted a long life, with remarkable purity of motive, singleness of purpose, and calm but deep enthusiasm. Towards this, all his studies and labours by pen and voice were unremittingly directed; and, though he met with the opposition and misrepresentation which the reformer much before his age always meets, he has already had an influence and done an amount of good which have fallen to the fate of few.

Like all great students of human nature and human well-being, from Socrates downwards, George Combe realised, as few have done more intelligently and earnestly, that, in any attempt to raise the race, the largest factor is education; that, to improve the people, we should begin with the children; and that in education, Science and Philosophy exercise their highest and wisest functions. Into education, therefore, he threw himself with all the ardour of a strong nature. With him more, perhaps, than with most students of the Philosophy of Mind, education was ever present to his thoughts as the best practical application of its principles. From early life, he was a diligent worker in the subject. It was an all-pervading element in everything he wrote and did, and it was his constant aim to reduce his philosophy to practice, and to help in framing a system of Educational Science based on the Science of Mind. Not only did he write specially on the subject, lecture on it in this country and America, organise meetings and societies to help it, and start schools to carry out his views, but all his books have continual reference to it, whether these are on biography, travel, Phrenology, morals, insanity, politics, or criminal law. Indeed, as he says himself, all his philosophical works are educational, and his greatest work, the "Constitution of Man," he regarded "as an introduction to an essay on education."[1]

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[1] Constitution of Man, 9th edit. p. 307.

I.

GEORGE COMBE'S EDUCATIONAL LABOURS.

I. HIS EFFORTS IN FAVOUR OF EDUCATION.

George Combe was born in Edinburgh in 1788, and died in 1858, after a studious and active life of seventy years. The natural bent of his mind, and the defects he perceived in his own home and school training (though he received as good an education as was then to be had in Scotland, in a virtuous home, and at the High School and University of Edinburgh), early turned his attention to education and the means of improving it. He always showed a decided leaning towards mental studies, but it was not till he came under the influence of Spurzheim, whom he at first strongly opposed, when that distinguished German visited Edinburgh in 1816, that the one work of his life was found in the study of Mental Science as based on Physiology, and of the practical applications of the philosophy thus created. Three years after this meeting, he published his "Essays on Phrenology;" three years later, his greater work in two volumes, "A System of Phrenology;" and six years thereafter, in 1828, "The Constitution of Man." He early began the study of education as exhibited in the light of the new philosophy he had adopted. In his first work, the "Essays on Phrenology," published in 1819, he has a section of considerable length on education, as an important subject "on which Phrenology was peculiarly fitted to throw a powerful light," containing sound and well digested views, of which his after studies were largely the expansion. His "System of Phrenology," published in 1822, is full of admirable educational matter. From 1820, when the Edinburgh Phrenological Society was founded by him, and especially after 1823, when the *Phrenological Journal* was established, his educational labours were unremitting, by writing, speech, and action.

In 1836, he became a candidate, along with Sir William Hamilton and Isaac Taylor, for the chair of Logic and Metaphysics in the University of Edinburgh, and then presented as remarkable addresses and testimonials[1] as certainly ever were submitted to an elective body, in this case, the Town Council. He was, of course, defeated by Sir William, and thus lost the opportunity of becoming a teacher by profession, though he was offered, the following year, a professorship in the United States.[2] It would be useless though interesting to conjecture what new influences on British and American thought might have been wielded by the philospher, as academic instructor in the new philosophy.

At the close of that year, he retired from business as Writer to the Signet in Edinburgh, which profession he had successfully followed since 1812, and his subsequent leisure enabled him to devote more time to his favourite intellectual and social pursuits.

He visited America in 1838, on a tour of investigation into the condition of the great Republic, in which his previous studies and natural tendencies had largely interested him. There he lectured on education as well as Phrenology, in many of the most important cities. These lectures were at once published, and exercised a great influence in that country. In 1840, he returned to Scotland, and issued soon after an admirable account of his visit, in three volumes, full of wise observation and excellent counsel on education and other subjects. He spent a considerable portion of his later years on the Continent, chiefly for the sake of his health, but also for the purpose of investigating the social and educational systems there and extending his philosophy. In this way, he visited Germany, Switzerland, France, and Italy, and issued the results of his inquiries in various forms.

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[1] These were afterwards published in a volume of 167 pages, on account of their bearing on Phrenology and its progress, George Combe resting his claims entirely on that science. See them reviewed in the *Phrenological Journal*, vol. x. p. 102; also a second address to the patrons, and an account of the election, p. 218.

[2] In the University of Michigan. See his "Life," by Charles Gibbon, vol. ii. p. 9, (London: Macmillan & Co., 1878).

From the commencement of the *Phrenological Journal*, of which he was one of the proprietors and at times editor, he wrote constantly on the many applications of Phrenology to which he turned his attention, education forming one of the chief. At various dates, from 1833 to 1857, he issued many pamphlets on different parts of this subject, suggested by his own studies and the progress of events. He also edited or prefaced several works written by others, chiefly Americans, which he was the means of introducing into this country, all for the same end, the improvement of education. In 1850, he wrote the life of his brother, Dr Andrew Combe, the eminent physician and phrenologist, whose educational works had also been numerous, and are still of high value.[1] This biography contains interesting details of the state of education during the early years of his brother and himself and at the time when it was written, and practical suggestions in regard to it by both brothers. From an early period, he contributed a series of articles on education to the *Scotsman*, to which journal he wrote on the subject to the last. Many of these have been recovered and appear in the present work.

But George Combe's labours in the cause of education were not confined to pen and speech; he engaged in a series of active efforts to promote its extension and progress. He was one of the chief opponents of the over-study of languages, especially classics, in education, a leader in the anti-classical contest carried on at the beginning of the century, and an active pioneer of Real education in our schools. He entered warmly into all endeavours to improve the High School of Edinburgh, where he had himself been taught, and when the present High School buildings were founded in 1825, he specially wrote and moved with the view of broadening its curriculum, though then with but little success.[1]

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[1] Dr Andrew Combe is the author of "The Principles of Physiology applied to the Preservation of Health, and to the Improvement of Physical and Mental Education"; "A Treatise on the Physiological and Moral Management of Infancy"; and "The Physiology of Digestion," &c. (Maclachlan and Stewart, Edinburgh). He was one of the first to expound Physiology and the Laws of Health in their relation to education, and to urge their systematic teaching in schools. See his "Life and Correspondence," by George Combe.

He was a most earnest worker in the establishment of Infant Schools throughout this country and America, when these schools first sprang into existence. Along with other educationists, he induced the celebrated Wilderspin to visit Edinburgh in 1829, and was one of the original founders of the Edinburgh Model Infant School Society[2] and of the Infant School founded that year as the result of this visit; the example of Edinburgh being followed by other towns in the east and north of Scotland, and Infant Schools successively established in Aberdeen, Dundee, Kinghorn, Dunfermline, Portobello, Inverness, and Dingwall, after visits by Wilderspin: while Stow's efforts in Glasgow led to the foundation of similar schools on his own system, in the west. George Combe, on all occasions, earnestly recommended Wilderspin's principles and methods, and did a great deal to spread these in this country and America.

About 1830, he commenced active lecturing, in various parts of the country, on education as illumined by Phrenology. These lectures were largely attended, and did a great amount of good in drawing attention to the principles and methods of education, and in enlightening the public mind in regard to it. For this purpose, he visited, amongst other places, Newcastle, in 1833 and 1835; Glasgow, in 1836; Aberdeen, Manchester, and Liverpool, in 1837; Bath, Birmingham, and Manchester, in 1838; and other large towns in the United Kingdom. The greater part of these lectures, now published for the first time, is incorporated in the present work.

In 1832, his lectures on Phrenology and other subjects led to the formation of "The Edinburgh Association for Providing Instruction in Useful and Entertaining Science," called successively "The Philosophical Association," and "The Philosophical Institution," which is still in existence and is now so well known in Edinburgh. This was one of the first societies to popularise Science, by providing regular series of lectures on various sciences for the general public, at a time when such lectures were greatly unknown; and George Combe was one of its most earnest supporters. In connection with it, he delivered lectures on Phrenology, and on Moral Philosophy;[1] and in 1833, three lectures on Education, which were largely attended and excited great interest throughout the country. These were reprinted in *Chambers's Journal* and thus gained wide publicity; they were also published separately under the title of "Lectures on Popular Education: its Objects and Principles."[2] In order to assist in the diffusion of a species of knowledge which he considered of the greatest importance to human well-being, and which he desired to be taught in all schools, he took great interest, along with James Simpson and others, in "The Edinburgh Society for diffusing Moral and Economical Knowledge," founded in 1835.[3]

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[1] See an account of this anti-classical agitation, and George Combe's part in it, p. 86.

[2] This Society was one of the earlier educational societies, the foundation of which was a special feature of the time, and which did a vast amount of good. The Society and its School flourished for many years; and they not only did very good work, but the School became a kind of model school for the training of Infant School teachers. Good and interesting reports were published by the Society, some of which will be found in the Appendix to James Simpson's "Philosophy of Education." See also some details regarding it, in "Infant Education" (W. & R. Chambers).

George Combe was the most active and most powerful advocate that Scotland has seen of the "Secular" system of education, which holds that Theology should not be taught in schools, but by each church to its own adherents, and that all other subjects, known as "secular"—which, however, according to George Combe and his friends, included the training of the Religious and Moral powers—should be taught in schools. In order to advance these views, he published a pamphlet, in 1847, on "The Relation between Religion and

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[1] The latter are published as his work on "Moral Philosophy."

[2] See No. 1, p. 10, regarding these Lectures.

[3] See Simpson's "Philosophy of Education," Appendix No. VII. Mr James Simpson, Advocate, of Edinburgh, was a great friend of George Combe, and co-worker with him in many of his efforts for the good of mankind; and one of the most enlightened and advanced educationists of the time, whose labours for education were very great and should be better known. Numerous references to him occur in this work, and a long extract from him is given in Appendix No. I., p. 660. See Index regarding him.

Science,"[1] and in 1848, another on "What should Secular Education Embrace?" These at once roused the greatest interest, if not excitement and opposition—a third edition of the latter being speedily called for.

In November 1848, while the great French Revolution was rousing Europe to new intellectual and social activity, in conjunction with Mr Simpson and other friends, he issued the prospectus of a new school, called a "Secular School,"[2] in which the principles he had so long advocated of a broader and truer education than was common, apart from theological instruction, were to be carried out. A public meeting was called in Edinburgh, at which the nature of the instruction and training proposed to be given there was explained by him, and the future teacher introduced. The school was opened on the 4th of December 1848, and was known as "Williams' Secular School," from its head master, Mr W. Mattieu Williams.[3] It was carried on temporarily in Infirmary Street, and latterly in Surgeons' Square, Edinburgh. In addition to "the three R's," the following subjects were taught in this school—grammar, composition, geography, history, book-keeping, drawing, vocal music, sewing; the elements of algebra, geometry, Natural History, Chemistry, Natural Philosophy, Moral Science, Social Economy, Physiology, and Phrenology; the materials and processes of the arts and manufactures; and the characteristics and beauties of architecture, sculpture, painting, poetry, and natural scenery, "as a means of awakening in the children a love of the beautiful." Although doctrinal teaching was excluded, the Moral and Religious faculties were carefully trained in connection with the subjects taught, and this training formed a special feature. The school was expressly founded on the model of the first Birkbeck school, established five months before, in the London Mechanics' Institution, at the suggestion and with the help of William Ellis,[1] the munificent and enlightened founder of the other Birkbeck schools, whose ideas on educational subjects largely coincided with George Combe's, and who contributed liberally to the Williams School during its continuance. George Combe taught Phrenology and Physiology there. Annual examinations were carefully conducted by him and others, of which detailed reports appeared in the *Scotsman*, and five annual reports by Mr Williams were published, containing most suggestive hints on education. The school existed for six years, till 1854, when the death of Mr Simpson, the declining health of its founder, and the loss of the head-master, who obtained a better appointment elsewhere,[2] caused it to be given up. Similar schools, also known as "Secular Schools," were established in different towns in Scotland and England, and were very successful. These schools are interesting as giving practical embodiment to the principles advocated by George Combe, which will be found in detail in this work. They are also important as showing that his views were not theoretical and Utopian, but eminently practical and useful.[3] The closing of the Williams School was due entirely to external causes relating to the promoters, and not in any degree to the internal instruction and management, which seem throughout to have been of an unusually high order. During its existence, the school was a decided success.

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[1] Afterwards expanded into a large volume, under the title, "On the Relation between Science and Religion," and published in 1857.

[2] See p. 201 for a fuller account of this school.

[3] Afterwards author of "Through Norway with a Knapsack," and "Through Norway with Ladies" (Stanford, London), and other works; an excellent and enthusiastic teacher, with advanced views on education, as abundantly proved by his admirable Reports of the above school, extracts from which are given in the Appendix, as showing the practical working out of many of George Combe's educational principles.

The question of National Education began, about this time, earnestly to engage public attention, and George Combe and his friends took a prominent part in endeavouring to secure a system based on Non-sectarian principles, and conducted by Government. To promote these views, he published a pamphlet in 1846, which speedily ran through five editions, "Remarks on National Education, being an Inquiry into the Right and Duty of Government to Educate the People." From this time, the advocates of "Secular" education began to move more energetically and publicly in favour of their views, by meetings and publications. In 1851, they initiated a very vigorous agitation all over the country. A large public meeting was held in Edinburgh that year, at which these subjects were explained and advocated by George Combe and Mr Simpson, and favourable resolutions unanimously carried. Similar meetings were afterwards addressed by them, and similar resolutions adopted, in Glasgow, Aberdeen, Paisley, Manchester, and again in Edinburgh, and elsewhere. Reports of these meetings appeared in the papers of the day, and were published as pamphlets, which were extensively circulated. In pursuance of the same object, George Combe delivered a lecture, the same year, on "The Comparative Influence of the Natural Sciences and the Shorter Catechism on the Civilization of Scotland," which roused great opposition and called forth numerous replies. Meetings were held, at the same time, by other advocates of these views in different parts of the country, and the cause of National Unsectarian education under Government made rapid progress.[1]

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[1] Author of a remarkable series of educational and social works (enumerated p. 238), and one of the most enlightened educationists and educational pioneers in the country, who has spent very large sums in endeavouring to improve education, and whose works should be universally studied and put into practice. See p. 230, for a sketch of his labours.

[2] He became Lecturer on Chemistry and Experimental Physics at the Birmingham and Midland Institute. He still (1878) lives, in London, teaching, lecturing, and writing.

[3] See an account of these schools, p. 201; and of their characteristics, p. 252.

George Combe's last public speech was made in behalf of education, at an enthusiastic demonstration of the National Public School Association, in Manchester, in December 1851, when Cobden and Milner Gibson also spoke; an occasion which inspired the old man with the brightest hopes of ultimate, if not speedy, victory.[2]

Towards the end of his life, his health became more or less very infirm. But, although unable to maintain his more active exertions in connection with education, he continued writing on the subject up to the year of his death.

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[1] See a history of the Secular Education movement, p. 201, *et seq.*, and p. 586; also in George Combe's "Life," by Charles Gibbon, vol. ii.

[2] See his "Life," by Charles Gibbon, vol. ii. p. 296.

In 1857, he published a pamphlet on "The Teaching of Physiology in Schools," and his important work on "The Relation between Science and Religion," which is largely educational, and which is reckoned by some to be his greatest book.[1] Shortly before his death, in 1858, he wrote two vigorous leaders for the *Scotsman*, on Irish Education, and on the need of giving instruction in schools on the Principles of Trade, which show, at the advanced age of seventy, an undimmed strength of intellect, and the same keen interest in a subject which he considered of vital importance to human wellbeing.

II. HIS WRITINGS CONNECTED WITH EDUCATION.

The following is a list of the various works in which George Combe has treated of educational subjects, with the dates of their publication. All educational matter contained in these which has been deemed of more than temporary value, has been incorporated in the present issue.

I. WORKS WHOLLY EDUCATIONAL, AND MORE OR LESS FULLY REPRODUCED HERE.

1. "Lectures on Popular Education, its Objects and Principles," delivered at the Edinburgh Philosophical Association in April and November 1833. 1st edition in 1833; 2d edition in 1837; 3d edition in 1848. These include three lectures,—the 1st, On the General Subject of Education; the 2d, On the Education of the Working Classes; and the 3d, On Female Education.

2. Three Lectures on Education, delivered in America in 1838–40 and appended to the issue of his American Lectures on Phrenology, edited by Dr Andrew Boardman; originally published in New York, and reprinted by Maclachan and Stewart, Edinburgh, in 1839, but now long out of print. The first lecture is on Physical Education; the second, on Training; the third, on the Application of Phrenology to the Condition of the United States.

3. An Address, delivered at the Anniversary Celebration of the Birth

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[1] In a letter to Mr Templar (see p. 241), in 1858, George Combe says, regarding this work, "I consider it the most original, and, in its distant results, the most important of all my productions; but this may be like a parent's love of his youngest child, because it is my last."

[2] See pp. 603–7, for the former, and pp. 184–6, for the latter.

of Spurzheim and the Organization of the Boston Phrenological Society," on Dec. 31, 1839; published by the Society, and reprinted in the *Edinburgh Phrenological Journal* of July 1842.

4. An Article on "Education in America," in the *Edinburgh Review* of July 1841.

5. "Notes on National Education and the Common Schools of Massachusetts," originally appearing as leaders in the *Scotsman*, and afterwards reprinted, in 1845.

6. "Remarks on National Education, being an Inquiry into the Right and Duty of Government to Educate the People," first published in 1847; fifth edition, in 1848.

7. "What should Secular Education Embrace?" first published in January 1848, a 3rd edition being required by May.

8. "Report of the Proceedings at a Meeting of the Working Classes of Edinburgh, on National Education, held in the Waterloo Rooms there on the 21st of January 1851." Reprinted from the *Scotsman*, in 1851.

9. Report of a similar Meeting in Glasgow, held in the City Hall, on 18th April 1851. Reprinted from the *North British Daily Mail*.

10. Report of a similar Meeting, held in the Mechanics' Hall, Aberdeen, on 25th April 1851. Reprinted from the *Aberdeen Herald*.

11. Report of a similar Meeting, held in Paisley, on 29th Sept. 1851. Reprinted from the *North British Daily Mail*.

12. "On the Comparative Influence of the Natural Sciences and the Shorter Catechism on the Civilization of Scotland," a lecture delivered in Edinburgh, in November 1851, and published that year.

13. "Secular Instruction or Extension of Church Endowments?" Letter to His Grace the Duke of Argyle, in reply to the Duke's speech, in January 1852, on the Church of Scotland's Endowment Scheme. It appeared originally in the *Scotsman*, in January 1852, and was reprinted that year as a pamphlet.

14. Article on "Secular Education," in the *Westminster Review* of July 1852.

15. "On teaching Physiology and its applications in Common Schools," published in 1857.

16. Preface to "Thoughts on Physical Education and the true mode of improving the condition of Man," by Charles Caldwell, M.D., Kentucky; issued in America, in 1834; in this country, in 1836.

17. Numerous articles, reviews, and communications in the *Phrenological Journal*, from its commencement in 1823 to its close in 1847; published in 20 vols.

18. Leaders, letters, &c., which appeared in the *Scotsman* at various dates, up to 1858; also reports of his speeches, &c.

19. MSS. of Lectures on Education, delivered at different times, in various parts of this country and America, *now published for the first time.*

II. WORKS PARTLY EDUCATIONAL, AND EXTRACTED FROM.

1. "Essays on Phrenology," one vol., published in 1819, containing a special section on Education.

2. "A System of Phrenology," two vols., first published in 1824; 5th edition revised, in 1853.

3. "The Constitution of Man considered in relation to External Objects," first edition in 1828, 9th edition, edited by Robert Cox and Sir James Coxe, in 1875.

4. "Moral Philosophy, or the Duties of Man," in Lectures delivered at the Edinburgh Philosophical Association, in 1835–6. Issued in 1840; 3d edition in 1846 and 1859.

5. "Lectures on Phrenology," delivered in America, in 1838–40, edited by Dr Andrew Boardman, in 1839. See No 2, in first list.

6. "Notes on the United States of America," 3 vols., published 1841.

7. "The Life and Correspondence of Andrew Combe, M.D," one vol., published 1850.

8. "On the Relation between Science and Religion," one vol., dedicated in 1857 to Dr Charles Mackay; originally published in 1847 as a small pamphlet; 5th edition, edited by Robert and James Coxe, in 1872.[1]

9. "The Life of George Combe," by Charles Gibbon, recently issued, 1878, (London: Macmillan & Co.).

It is remarkable, considering his long study and intimate knowledge of the subject and his enthusiasm in regard to it, that George Combe did not write a formal systematic treatise on Education. This is greatly to be regretted, and its want is a loss to educational science and practice. He undoubtedly took a most active part in the educational problems of the day, and spoke and published his views in ways which did excellent service at the time, and which are of more than temporary value; but he never expressed his ideas in one great work, embodying the philosophical principles of education, as Spurzheim, his friend and master, James Simpson, Karl Schmidt, and others have done—all basing their views, like himself, on Phrenology.[2] Still, though he never accomplished this important service to education, his works on the subject are numerous, and, when collected and arranged, form a contribution to Educational Science of large extent and of the greatest value. His special utterances on education were made as occasion called them forth, in the shape of lectures, pamphlets, articles, speeches, and letters, many of these passing through several editions. The loss of such fleeting publications, even when written by the best writers on the most important subjects, is merely a matter of time; and George Combe's have been no exception to the rule. Several of them are still issued and may be had from the same publishers,[1] but many of them, including some of his larger works, are now quite out of print and have been recovered with great difficulty. It is believed that most that he ever wrote on Education is included in this work, with the exception of some articles in journals and newspapers, which cannot now be identified with certainty. The loss of these may be considered a small one, but it will be regretted by all who know George Combe's works, his careful study of all he ever wrote, and his clear exposition of the principles on which his opinions were based, in even the most evanescent of his productions.

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[1] All the foregoing works by George Combe were published by Maclachlan and Stewart, South Bridge, Edinburgh, from whom copies of all that are in print may still be obtained. Quotations from these works, in the present reissue, are always made *from the last edition*, unless otherwise mentioned.

[2] See Spurzheim's "View of the Elementary Principles of Education, founded on the Study of the Nature of Man"; Simpson's "Philosophy of Education," 2d edition (Adam and Charles Black, Edinburgh), an excellent work, now unfortunately out of print, but abundantly deserving republication at the present revival in education; Schmidt's numerous pædagogical works, espe-

It has been thought better, for many reasons, not simply to reprint the scattered writings as they were published, but to classify them according to the subjects, excluding all merely temporary and unimportant portions, and the repetitions which periodical literature always produces in even the most rigorous writers, and incorporating all matter bearing on education contained in his larger works. In this way, an attempt has been made to present a systematic exposition of George Combe's views of educational principles and practice, in the absence of such by himself. It is hoped that thus more justice will have been done to his labours as an Educationist, and a more complete and useful contribution to the Science and Practice of Education produced.

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cially his "Geschichte der Pädagogik" (1862, 4 vols.), translated in Barnard's American Journal of Education. See p. 470, for other educational works on a phrenological basis.

[1] Maclachlan and Stewart, Edinburgh.

Several considerations suggested the present collective issue of these educational works. Until now, as already said, most of them have only existed in scattered and fleeting forms, and many of them, being out of print, are very difficult to obtain, and in a few years would be altogether lost. There were also the educational materials embodied in his larger works, which in that shape were greatly lost to education, not being accessible, in any practical form, for general or professional use. But chief of all was their great worth as contributions to educational science, practice, and history; and it was the conviction of the great excellence of the ideas they contain, and their permanent value to education, that first suggested to the present editor the desirableness of their collective re-issue. They were, in fact, too good to be allowed to perish, or to remain in an inaccessible or scattered form. It was also felt that it would be only simple justice to their author, to show the part he had taken in educational reform and progress in this country and America; and that, in addition to the good they were calculated to accomplish, they would furnish valuable materials for a necessary and important chapter in the educational history of our country. The idea of this re-issue was warmly taken up by the Combe Trustees,[1] and the editor was employed to carry it out.

The publication of these contributions to education at the present time seems also opportune and important. They will be found not only to contain excellent educational matter, but to embody views still much in advance of our own day. It will also be seen that George Combe has treated, in his own clear, philosophical, and exhaustive way, most of the topics that have been and are still discussed, in connection with recent Education Acts and Codes and the great social and practical questions opened up by their means. His ideas on important controverted subjects in the practical conduct of education, which are now so earnestly engaging public attention, will be found to be as much, if not more, needed at this period of our history than when they were originally published; and they ought to have no small influence in settling the public mind in regard to them, on a firm, fair, and philosophical basis.

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[1] These consist of certain gentlemen who have the management of funds left by George Combe, for the publication of his works and the advancement of his views. The late Sir James Coxe, his nephew, chairman of the Trustees until his recent death, took the greatest interest in the present work. See note, p. 452. Dr Arthur Mitchell, Commissioner of Lunacy, Edinburgh, is now chairman.

The present is also a much more favourable time, than when George Combe lived, for the reception of his ideas on education, especially those on strongly debated but vital points. When they were first broached, the country in general had extremely little knowledge of education, and was still less disposed to receive with calmness the solutions of certain educational questions advocated by him. His views were then largely misunderstood and met with strenuous opposition, while he himself was subjected to misrepresentation, if not to obloquy. On most of the controversial points in question, his ideas were not only novel, but they were ignorantly thought to be opposed to religious truth and even to social order; and the country had not been prepared to accept them. But educational and social principles are now much more widely diffused, a more liberal spirit pervades all classes, and opinions once fiercely attacked, or wrathfully or suspiciously regarded, now obtain a fairer hearing; and George Combe's ideas will no doubt be better received and do more good now, than when first promulgated, during a period educationally backward and less tolerant than the present.

II.

GEORGE COMBE'S VIEWS ON EDUCATION.

It will be well briefly to scan the educational principles advocated by George Combe, and embodied in the present work.

I. WHAT EDUCATION IS.

Education, to be worthy of the name, and to accomplish the great end which it should seek, ought to include two things—the development of the individual, and his preparation for the duties of life. It may be defined from either or both of these points of view, but the educational process to be complete must perform both functions. Of these, development is the higher, and should be its chief, aim.

The central thought in George Combe's views of education is the HEALTHY AND HARMONIOUS DEVELOPMENT OF THE INDIVIDUAL. He gives various definitions of education, according to the elements included in it; but the idea of DEVELOPMENT is, in his view, its highest function, on the fulfilment of which the happiness and usefulness of the man and the progress of the race depend, and by which the character of the process ought to be judged. Its object should, therefore, be "to train the bodily and mental powers of man, so as to bring them into harmony with the best state of health and activity, maintain them in that condition, and direct them all to their proper objects;" or, as he elsewhere puts it, "to train, by means of exercises, the whole systems composing the human being to the best condition for exercising their functions."

But in order to fit a human being for the performance of the various duties of life, personal, domestic, social, professional, political, and religious; he must also receive some knowledge of what these duties are, of the best means of performing them, and of the fields of their exercise—in other words, he must receive INSTRUCTION. As our author says, "One great object of education is the attainment of knowledge itself."

These two distinct but co-ordinate functions of education have not been sufficiently perceived and acted on in general practice. Training has been too often omitted, while Instruction has been more or less supposed to include all. Much of the confusion of idea and of the prevalent differences of opinion in regard to what education is, has arisen from the want of a clear understanding of the nature and aims of these two functions. But education, while distinguishing between them, should equally include both; and, in a true system, they should be so adjusted as mutually to assist each other, the instruction given affording the best means of training the faculties, and the training of the faculties improving and deepening the instruction.

On the co-ordinate working of these two elements in the educative process, George Combe lays the greatest stress. Hence he defines education, in full, as "the process of acquiring that knowledge of our Creator, of ourselves, and of external nature, and the formation of those habits of religious, moral, and intellectual enterprise and activity, which are indispensable to the evolution of all our faculties, and to the performance of our parts with intelligence and success." In the usual manner in which education is carried on, he finds that Training, though the more important of the two, has been very greatly neglected, and the work confined almost entirely to Instruction. Moreover, in the matter of Instruction, he discovers very grave errors, both of defect and excess. He, therefore, takes great pains clearly to distinguish between these two educational aims, lays down, with great care, the principles on which both should be founded and conducted, and suggests the best means of doing so.

II. THE NATURE AND IMPORTANCE OF TRAINING.

The principles on which TRAINING should be based and carried out are indicated by the very idea of Training, as the process, in reference to education, "of strengthening and enlivening, by means of exercise, all the faculties of mind and body composing the human being, to the best condition for exercising their functions on their proper objects." To *train*, therefore, means, in mind as well as in body, simply to *exercise* the faculties according to the laws of their activity, in order to quicken the slow, strengthen the feeble, repress the over-active, and direct the whole to their proper functions and objects. "A proper system of education," says our philosopher, "must exercise each faculty of body and mind, and bring all into equilibrium."

It is at once evident, as a necessary preliminary condition of skilful training, that the trainer or educator should know what the different faculties are, and the laws of their activity. Hence the urgent need that all teachers should study the Mental and Moral Sciences, which give this knowledge of the faculties. George Combe found this knowledge in Phrenology, and he constantly brings to bear on education, with the best results, his exhaustive knowledge of this subject. But wherever found, a careful and intimate study of Mental and Moral Science should, beyond question, form one of the most important parts of the preparation of a teacher for his duties.

The field of training is as broad as human nature, for it should embrace every faculty—physical, intellectual, æsthetical, moral, and religious. George Combe has treated this subject with a fulness worthy of the importance he attached to it. In Part Third will be found a body of principles and suggestions in regard to Training which are amongst the most valuable portions of his educational works, inasmuch as these are the results of a rare knowledge of human nature in all its departments. They form one of the few scientific contributions to education that have yet appeared. In these are carefully expounded the laws that regulate the action of the faculties, as bearing on general educational practice, and as applied to the more specific fields of physical, moral, religious, and intellectual, education.

Conversant as his official duties make him with school work, the editor is convinced that the one great need of all our educational practice is to have it redeemed from its too pre-

the human constitution—a Science broader and more difficult than the highest and hardest of the Physical Sciences, and therefore demanding, but abundantly rewarding, the most devoted life-long study.

III. THE NATURE AND AIMS OF INSTRUCTION.

The subject of INSTRUCTION is also one of great importance, and to it George Combe devotes much attention, on account of the errors prevalent in regard to it. In determining what Instruction should be given, there are two leading inquiries—1st, What constitutes Instruction? and 2d, What are the best means of imparting it? The second question is answered at once by the principles of Training just spoken of; for whatever is taught, should be taught according to the laws of the human constitution. The principles of Training therefore regulate the manner of instructing; and we should so conduct our Instruction as that it shall become the best means of carrying on the other and higher function of education, that of the training or development of the child.

The inquiry as to What constitutes Instruction, and what subjects should be taught in the ever extending field of knowledge, is a wide and important one. It is answered by George Combe with great breadth of view, and with invincible logic. It is at once evident, as a guiding principle of selection, that *Education should communicate such knowledge, and such amount of it, as will enable a man intelligently and successfully to perform the various duties of life, personal and relative, and, at the same time, give the best training to all his faculties.* He therefore holds that, properly conducted, "Instruction should consist in becoming acquainted, first with ourselves, and then with the world without, with which we are in relationship; and with the mode of so adapting our conduct to external circumstances as to produce the greatest amount of happiness to ourselves and benefit to others."

An important distinction in regard to knowledge, on which George Combe places great weight, is its division, as related to education, into the two great classes of Instrumental knowledge,

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progress since these strictures were written. The distinction between the two classes of subjects is as important now as it was then, and requires to be as earnestly pressed on our notice, especially with the present growing over-tendency to judge of education solely by examination tests, and therefore largely by cram, chiefly applied to Instrumental subjects.[1]

In order to decide which of the numerous branches of Positive knowledge should be taught in school, George Combe lays down what he considers the principles that ought to guide us in our choice. The central idea should be, to enable a child *to know and understand himself, and all his relations.* The child enters the world, an intelligent and emotional unit, amidst a wonderful and complex system of things and beings, among which he must shape a course marked out for him by the unchanging laws which regulate the system. It seems only wise and right, therefore, that he should know himself, the system and its laws, and the part he should play in this system and amidst these laws. This leading principle in regard to the knowledge that the child ought to possess, would seem axiomatic; yet it will be found most revolutionary, as respects our scholastic practice. But though simple, it is all regulating and all embracing, and it will guide us clearly in the choice of the subjects that ought to be taught. Led by it, we should teach the child to know his own constitution, and to realise his relations to the system of nature and of man; and we should instruct him in all the duties incumbent on him arising from these relations—physical, intellectual, moral and religious, personal, social, and political. As George Combe says, " we must teach a child what it is, where it is, what it ought to do, and how it ought to do it, in order best to fulfil the object of its existence." " In whatever sphere of life we move," as he tells us, " we are encompassed by the elements of nature, which minister to our health and enjoyment, or to our detriment and discomfort, according as we use them wisely or the reverse, according as we adapt our conduct to their real qualities or run counter to their influence. We are surrounded by human beings, and are influenced by the great tide of human affairs; and without a knowledge of external nature and of the nature of man, his history, laws, and institutions, we shall be no more capable of acting well and wisely our parts through life, than is the mariner of steering successfully without helm, compass or chart, through the ocean."[1]

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[1] See an account of the anti-classical contest at the beginning of this century, p. 86; and George Combe's views on the subject, p. 69.

IV. THE SUBJECTS RECOMMENDED BY GEORGE COMBE FOR SCHOOLS.

The different subjects which George Combe would have taught, in accordance with these principles, are discussed in Part Second, as well as the extent to which they ought to be or can be taught in school, during the limited time at command. The programme there sketched out is broad and liberal, and, however much it may differ from the course pursued in our schools, it is simply a detailed expression of his guiding principle, of furnishing a child for his life work and enabling him to fulfil efficiently and happily the objects of his existence.

Of subjects which are still frequently omitted in our educational practice, on which great weight is here laid, and which from their importance deserve special mention, there are the following:—

A. THOSE SUBJECTS WHICH GIVE A KNOWLEDGE OF MAN'S CONSTITUTION.

1. *The Subjects which treat of Man's Bodily Constitution.*—Anatomy and Physiology. Thanks to George Combe and other enlightened workers in this field,[2] Physiology has come to be more recognised than when he advocated it, and is now one of the subjects for which Government grants are given. A

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[1] "The ultimate end of education is not a perfection in the accomplishments of the school, but fitness for life."—Pestalozzi, in his 21st letter to J. P. Greaves, published, in 1827, as "Letters on Early Education."

[2] Among the first to recommend the subject for schools were George and Andrew Combe. Among the earliest to teach it were William Lovett, the eminent Chartist (who also wrote the first text-book on it for schools), George Combe, Mr Mattieu Williams, and Professor Hodgson of Edinburgh. (See p. 102, for details as to the history of this subject in schools.)

broader system of Physical Training, and instruction in the practical Principles of Health still require to be recognised in our schools. There are hopeful signs that Physical Education, in its fullest scientific acceptation,[1] will ere long be part of the curriculum of all our schools.

2. *The Subjects which treat of Man's Mental Constitution.*—For these, George Combe pleads earnestly and convincingly. It would seem an essential part of education, to know the highest element of our nature, the mind. Yet this field remains almost if altogether untouched in our schools. Of course, the instruction given should be suited to youthful capacity, like all instruction; but it can be so adapted, in spite of its seeming difficulty (and it is only seeming), and can be made simple, interesting, and practical. Our philosopher taught this subject for years in the Williams School, as Phrenology; and therefore, in urging its general teaching, he speaks from his own experience as to its simplicity and interest.[2] The special mental system taught will, of course, be decided on by the teacher, but the things taught, under whatever names, should be the real facts and laws of human nature.

B. THOSE SUBJECTS WHICH GIVE A KNOWLEDGE OF MAN'S EXTERNAL RELATIONS.

1. *The Subjects which treat of his Relations to External Nature.*—These subjects include the various Physical Sciences, many of which are now introduced into our schools. One of these subjects, for which George Combe pleads with special earnestness, still waits for recognition,—the Relation of external objects to man's constitution, with the Principles on which the Moral Government of the World is carried on; in other words, man's moral relations to his surroundings. These he has developed chiefly in his Constitution of Man. They can be simply taught to children, when they reach the age of reflection; he taught the subject himself in the Williams School, to pupils from ten years and upwards.[3] The moral

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[1] See Scientific Physical Education explained, p. 363.

[2] See details of what he would have taught, p. 108, and examples of his teaching, p. 485.

[3] An edition of "The Constitution of Man," for the use of schools and

and religious relations of Natural Science to man have been very greatly neglected by both scientific men and theologians, to the injury equally of Science, Morals, and Religion; and the teaching of these relations in our schools would do much to destroy the unnatural divorce existing between these great systems of truth.[1]

2. *The Subjects which treat of his Relations to his Fellowmen.*—It would seem only natural and reasonable, before a child enters on practical life, to furnish him with a chart or plan of life; to give him correct views of the principles, machinery, and objects of the wide social world before him; and to train him to act habitually in view of these, in his daily conduct.

(1.) The child should, therefore, be taught the *Principles of Morals,* which regulate his intercourse with his fellowmen, and the various duties arising therefrom. These are simple and practical, and quite within his capacity, and, by illustration and otherwise, can be rendered eminently interesting and valuable.

(2.) The child should be taught "*Sound views of his real situation as a member of the Social Body.*" He ought, therefore, to be instructed in the principles of *Social Science,* which are easily within his grasp when properly treated. These were taught in the Edinburgh and other Secular schools. They have always formed the special feature of the Birkbeck Schools, having been introduced there by William Ellis since their foundation in 1848, though taught by him in schools since 1846.

(3.) But the child becomes also *a member of the Body Politic,* and he has certain duties to perform in this relationship. He should, therefore, be taught the principles that regulate these,—in other words, *Political Science.* The relations of education to political action are dwelt on by George Combe at great length, and with clear demonstration of their importance, and of the need of having our people instructed in the principles of

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families, was published in this country, in 1838 (Maclachlan & Stewart, Edinburgh); and another in New York, in 1855. These are good and simple, and easily taught.

[1] See George Combe's views on this subject, in chap. v. p. 123.

Political Science.[1] This subject, as a part of Social Science, also forms a regular branch of instruction in the Birkbeck Schools.

3. *The Subjects which treat of Man's Religious Duties.*—One strong point in George Combe's views of education, as already said, was the rigid exclusion of all dogmatic teaching in Theology from schools. This teaching he considered it to be the duty, not of government or of schools, but of the churches to undertake; which the churches would undertake, if they truly realised their own interests and the importance of the work. As a supporter of the "Secular" platform in education, he has explained his position on this subject, and fortified it with a clearness and cogency which have been surpassed by no advocate of this view.[2]

But, while thus demanding the separation of Doctrinal teaching from school studies, he is equally strenuous in maintaining the need of Religious education, as an essential part of the school course. He urges the careful training of the Religious faculties in schools, by their constant exercise during all other lessons, especially the teaching of science; and no defender of Religion in schools pleads more earnestly for Religious training, as thus conducted, than this man, who has been so unjustly branded as its enemy. The difference lies only in his excluding Doctrinal matters, referring to the other world, with which the State, he holds, has nothing to do, and on which there exists so much strong difference of opinion, from places of instruction where the children of parents of every variety of religious conviction attend. In thus advocating a broad and constant Religious training as a vital part of school work, he was only carrying out the central principle of education, the training of *all* the faculties of a child. As is said in the first Report of the Williams School, "this course by no means excludes the training of the Religious Sentiments; for reverence for the Supreme Being and obedience to His will may be efficiently taught by presenting to the minds of children the evidences of His existence, power, and beneficence, the laws which He has instituted as they are embodied in His works of creation, and the temporal consequences of obeying or infringing them. As these points admit of inductive philosophical demonstration, comparatively few differences of opinion exist in regard to them, while they form a basis on which further Religious knowledge, imparted by its more appropriate teachers, may advantageously be founded."

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[1] His ideas on the subject will be found, chap. vi. p. 170.

[2] See chap. ii. p. 558.

George Combe thus differs from many, if not most, of the advocates of the Separate system, who would exclude *all* Religious training from schools, a position no one would have more regretted or opposed than he. As he says himself, "True Religion would harmonise with, hallow, vivify, and render practical a scheme of education founded on the principles revealed to man in the order of God's secular Providence."[1] His treatment of this delicate question of Religious education, his clear distinctions between things that are often confounded in the controversy, his defence of religious training as based on human nature and God's works, and his admirable vindication of scientific teaching against the charge of godlessness, should commend themselves to all parties, whatever their opinions.[2]

The kind of Religious training thus urged by George Combe was a special feature in the Williams School and others on the same model; and it has always been carefully carried out in the Birkbeck Schools, where it forms what their founder truly designates "The Religion of Common Life."[3]

The foregoing is the outline of Instruction sketched by George Combe. He is careful not to dogmatise as to the specific subjects that ought to be included in the school curriculum. All he aims at is "to unfold principles and views which may form the ground-work, and serve as guides to the practical evolution, of a sound system of education." He would leave details to educationists and teachers, but he stands fast by the principles and the consequent outline.

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[1] Preface to 3d edition (1848) of "Lectures on Popular Education."

[2] See chap. v. p. 123, for his ideas on the Religious training that should be carried out in National Schools; and p. 576, for the means by which Religion should be taught.

[3] See "The Religion of Common Life," by William Ellis (Smith, Elder, and Co., London), a book which should be in the hands of every teacher.

In brief, what is maintained is this:—A child is a being possessing a certain physical and mental constitution. He enters the present system of things and beings, which forms part of the universal whole. As a child, he holds certain relations to his home circle, and by and by, as a man, will enter into other relations—domestic, social, political, moral, and religious. His true education ought to make him acquainted with his own constitution—physical and mental—and with the laws that govern it; it ought to train and develop that constitution to as healthy and perfect a condition as possible; and it ought to teach him to know, and train him to perform, as efficiently and happily to himself and others as may be, the duties arising out of each of the various relations in which he is and will be placed, as regards himself, and society where he must play his part. In a word, his education should give him the requisite training, and that amount and kind of knowledge, which will prepare him to perform the duties arising from all the relations in which he stands to God, the universe, himself, and others. The outline of a Real education should embrace Instruction and Training in all these relations. If this outline is sound, it becomes a most practical and pressing question, in what elements our present educational systems are deficient, and how best to improve them in the light of these principles.

V. OTHER EDUCATIONAL TOPICS DISCUSSED BY GEORGE COMBE.

1. In connection with the subjects that should be taught, George Combe has also treated another matter of great moment, which is now securing increased attention—*The Education of Women.* As might be expected from one who rests his educational system on the structure and laws of the human constitution, he advocates for women the broadest education suited to their nature; inasmuch as they are human beings equally with men, possessing a similar constitution and similar faculties, which require as careful and universal

cultivation as those of men. His treatment of this subject will be found as good and fresh as if written yesterday.[1] It is discussed with his accustomed breadth and soundness of view, and with convincing argument. At the same time, he recommends an education for women so far special, as their constitution is feminine and their duties are peculiar, in order to prepare them for "the great secular business of female life." His observations on this subject should command the special attention of all interested in one of the greatest factors in the elevation and culture of the race, the education of its mothers and nurses.

2. As might be expected, George Combe replies to the common objection to the introduction of new subjects of study, for it was made then as well as now—*The Want of Time.* His answer, of course, is that, if there are certain necessary elements in man's education, arising from his constitution and relations, time must be found for these; and we must so arrange our course of study as to include all *essential* subjects, while curtailing the less important, throwing out others not required, however sanctioned and glorified by time and tradition, and making way for the judicious treatment of those wrongly neglected. To this objection of the want of time for these necessary subjects, he devotes little attention, indignation against its irrelevancy, in such an important inquiry, taking the place of discussion. "Is life then so brief," he asks, "and are our hours so urgently occupied by higher and more important duties, that we cannot afford these pittances of time to learn the laws that regulate our existence?" And he further dismisses the subject by acutely pointing out the practical fact, that "these laws, when neglected, punish so severely, that the offender loses more time in undergoing his chastisement than would have been requisite to obey them."

3. His discussion of the question as to *Who should be educated* in a Commonwealth, is full and most satisfactory. He advocates Universal Popular Education, and, according to his wont, takes his position on the firmest philosophical grounds. Going to the root of the matter, he founds the

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[1] It is contained in Part Second, p. 56.

demand for the education of the Labouring classes, on their natural right, as human beings, to be educated. He advocates it on the additional pleas, of education being the only means of raising their condition, of the social advantages of their being educated, and of its need for the exercise of political functions, especially with an extending, and much more with universal, suffrage. He also answers conclusively the various objections to Popular Education made then, and not unfrequently heard even now.

4. George Combe was one of the earliest advocates of a *Free Education*, that is education without fees, supported by taxation alone, which, being thus supported and being universal, would be neither eleemosynary nor pauperising. Free education follows at once from the educational functions which he holds that the State should discharge towards the people.

5. He also discusses the great question, which now vexes certain parts of the country and sections of the community —*By What Agencies should National Education be carried on?* To this subject, he devotes great attention, and he treats it in such a way and on such grounds as ought to be of eminent service in helping to settle the question. He holds that the education of a country should be carried on by the State. His discussion of the rights and duties of Government in regard to the education of the people, is one of the most exhaustive and conclusive expositions of the whole subject that has ever been written. As usual, he bases his treatment on the broadest philosophical premises, beginning with the origin of society and of government, and with the true nature of the rights of individuals, and of restrictions on individual liberty. He applies his conclusions to education with remarkable cogency and felicity, demonstrates the Right and Duty of Government to conduct it on behalf of the people, and concludes equally against the voluntary and the ecclesiastical conduct of National Education.

6. Finally, George Combe discusses another subject which has of late been gaining the larger attention which its importance to education demands—*The Professional Training and the Social Position of the Teacher.*

As an immediate corollary from the high idea he entertains of what education is and of the manner in which it should be conducted, as being a process based on the scientific knowledge and the scientific training of the whole constitution of man; it follows that the person who is to carry on this most responsible and most difficult process, should receive special and most careful training for his work. He points out, with indignant scorn, that the much-vaunted Common Sense of mankind, so often lauded by the opponents of professional training for the teacher, is altogether insufficient for this duty; and that the sailor or the blacksmith would scout the very idea of common sense being sufficient to steer a ship or make a horse-shoe. He asks, as has happily been often asked of late, if "training the human mind demands less scientific skill and experience than shoeing horses?" From the character of the work of education, he points out the urgent need of having the teacher carefully instructed in a scientific knowledge of man's whole constitution, by a thorough course of Physiology, Mental and Moral Science, and their applications to the training of the young, and to the specific subjects of study in school and college. But so directly does this necessity flow from the real nature of education, truly comprehended, that he does not dwell at great length on the need of a thorough professional training for the teacher. And to every one who realises what education truly is, what it includes, and what its aim should be, the same conclusion will follow as directly, in regard to the paramount need of special professional training for those who are to conduct that delicate work; and it will be pleaded for with an earnestness equal to the clearness of vision on the true function of education, as that of the wise development of the whole of human nature, and on its bearing on human wellbeing.

George Combe also demonstrates the wisdom of raising the social status of the teacher, basing his appeal on true self-interest and patriotism. He conclusively argues that "if the man who takes care of our bodies is considered equal with the best of us, surely the man who takes care of the mind—trains and instructs it—should not be considered below our companionship! So to consider him is a relic of barbarism." At the same time, with equal discernment and truth, he points out that the only means by which this desirable appreciation of teachers can be obtained is, by teachers taking steps to educate themselves for their important duties, like other professions, by the best scientific professional culture.

VI. GEORGE COMBE'S USE OF PHRENOLOGY IN EDUCATION.

One subject requires a few remarks, to remove possible prejudice, and to allow this work a fair opportunity of doing the good it is calculated to do—*The relation of George Combe's Phrenological ideas to his views on Education.* In the first place, it should be remembered that it was through Phrenology, as he repeatedly and gratefully declares, that he gained all his insight into human nature, and into the principles and practice of education; and, therefore, if his educational ideas are sound and good, instead of taking offence at his Phrenology, we ought rather to feel thankful that this science has furnished him with these ideas, and, through him, ourselves. At the worst, we should only feel surprise that so much good has come out of "Nazareth," and, like the guileless man of old, "come and see."

It will be found, however, that the use of phrenological terms in his treatment of education is more sparing than might have been expected from one so enthusiastic in its promulgation and so accustomed to its technicalities. Seldom does it prevent a reader from understanding his meaning.

It should be remembered, that the facts of human nature are facts, in whatever phraseology they may be expressed, whether of the orthodox Metaphysical school, or of the Phrenological, or the Physiological schools; and that the faculties spoken of in Phrenology are now generally acknowledged to be faculties or powers of the human mind, whether it be agreed or denied that these faculties are localised in certain organs situated in different parts of the brain. So that, as our author says, "the practical value of the views here propounded does not depend on Phrenology. The latter, as the Science of Mind, is itself valuable only in so far as it is a *just exposition* of what exists in human nature. We are physical, organic, and moral beings, subjected to natural laws, whether the connection of different mental qualities with particular portions of the brain, as taught by Phrenology, be admitted or denied. Under the impulse of passion, or by the direction of intellect, men will hope, fear, wonder, perceive, and act, whether the degree in which they habitually do so be ascertainable by the means which it points out or not. In so far, therefore, as this work treats of the known qualities of man, it may be instructive even to those who reject Phrenology as unfounded; while it can prove useful to none, if the doctrines which it unfolds shall be found not to be in accordance with the principles of human nature, by whatever system these may be expounded. The importance of Phrenology, however, must not be overlooked. If the brain is the organ of the mind, and if the vigour of its different faculties depends on the size and condition of special cerebral parts, then those who ignore these facts close their understandings against knowledge of the organic conditions which determine the varieties of natural dispositions and talents, and also the means by which God conducts the moral government of the world."[1]

At the same time, what George Combe remarks, in regard to the initiated and uninitiated, in reviewing Spurzheim's work on Education, must be true of this as of all sciences:—"As Phrenology constitutes the basis on which the fabric is reared, so an intimate acquaintance with its doctrines is necessary to the perception of the full value, and to the adequate practical application of the precepts which it inculcates. Though much of the important and interesting information contained in it is perfectly accessible to the common sense and good feeling of every reader, the unphrenological will fail to perceive the links which connect the different parts of the chain, and will thus see each observation as an isolated fact, and not in its true and most valuable light."[2]

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[1] From the preface to "The Constitution of Man."

[2] From review of Spurzheim on "The Elementary Principles of Education," in the *Phrenological Journal*, vol. i. (1823–24), p. 579.

The Physiological basis of mental phenomena, and the doctrine that the physical organism is, at least, the only medium by which mind can express itself in action, become more and more recognised and acted on in the study of Mental and Moral Science. It begins also to be more generally admitted, that Phrenology is founded on a large body of observations and experiments, that it was investigated with an admirable spirit of calm and careful induction by its first promulgators, and that it has unconsciously but powerfully leavened our views of Mental Philosophy and human nature, and forced on us, in spite of opposition, a large amount of its special nomenclature.

Many, who are not prepared to accept the localisation of the faculties, are yet disposed to agree with Archbishop Whately's[1] estimate of Phrenology, as furnishing an analysis of the mental faculties and a terminology "far more logical, accurate, and convenient, than those of Locke, Stewart, and other writers of their schools." It is also conceded, even by its opponents, that to this science is due the honour of initiating the only true scientific method of investigating mental phenomena, in and through its physiological relations. There is no doubt that it has done eminent service in contributing to the wonderful modern advance of Educational Science and Practice, by leading to a scientific recognition of the integral unity of the whole nature of man, and the need of its universal development as the true function of Education, and by elucidating more fully and clearly the means and processes by which this can be achieved, and the laws which regulate the faculties. It has thus come about, that Phrenology has ceased to meet with the fierce opposition and theological denunciation it first encountered, and the use of its nomenclature will not deter any sensible man from perusing any work, and from taking from it the good it may be calculated to give him.

George Combe himself was frequently remonstrated with, even by his friends, for using Phrenology so much in his lectures on education, and was advised to abandon it in deference to prejudice. His own answer to these suggestions is sufficiently to the point: "The remark," he says, "was occasionally made to me by persons who had heard my lectures on Education, without having attended those on Phrenology, that the views presented were so sound and luminous that I should have done much more good if I had omitted Phrenology, and delivered them simply as founded on common sense. This, said they, would have saved the lectures from the prejudices which exist in so many minds against Phrenology, and which render them suspicious of every doctrine and practice springing out of it. My answers were, First, That a knowledge of the influence of the organs on the power of manifesting the mental faculties, is a fundamental requisite to the right understanding of the subject of education. Secondly, That to have withheld this important knowledge, because it was unpopular, would have been improper and uncandid. By following such a course, I should also have been extending the impression already produced by too many disingenuous phrenologists, that the science is worthless, and that the soundest views of education may be obtained without its aid, which I know not to be the case. Thirdly, That such conduct would have been unjust and injurious towards the founders and defenders of Phrenology. It would have been appropriating to myself the fruits, and leaving to them not only the toil but the obloquy of having raised them. Fourthly, That lectures on education founded on Phrenology make a deeper and more permanent impression on the understanding than if based on mere Common Sense, and can be more certainly and successfully carried into practice.." [1]

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[1] Whately became a phrenologist, and told George Combe that "he had no more doubt of its truth than of the sun being in the south at noonday." (Letter of George Combe to Mr James M'Clelland, Glasgow, of 7th September 1846). See George Combe's "Life," for his intimacy with Whately.

[1] America, vol. iii. pp. 175–6.

III.

GEORGE COMBE'S RELATIONS TO THE EDUCATION OF HIS TIME.

LET us now endeavour to ascertain more fully George Combe's relation to the education of his own time, and to estimate, in some degree, the services he has rendered to education in the past, and the influence his views are calculated to exercise in the future.

I. THE STATE OF EDUCATION AT THE END OF LAST CENTURY.

Education at the end of last century was in a very backward condition throughout the British Isles. In Scotland, the advanced parochial school system instituted by Knox was intended by him to be much broader than it ever became. However efficient in its earlier days, this system had ceased to be suitable for after times, and had greatly become stagnant and inelastic in spirit and practice, after the two hundred years of its existence. It had become inadequate for the increasing population of the country, and insufficient for its growing intellectual and social life, and, like all old and conservative institutions, it resisted every suggestion of improvement. It was hide-bound by tradition in discipline, subjects, and teaching. It had even then ceased to provide sufficient accommodation for many country parishes, and neglected almost entirely the crowded masses in the rapidly advancing centres of trade and industry. The subjects taught were much the same as in the sixteenth century, when the system was founded, and had not expanded with growing intellectual and social needs. They consisted, for the most part, of the mere elements of instruction, which alone the many were taught, only the few who showed any intellectual power being instructed in higher subjects that prepared for a University; while the general work of the school was largely sacrificed to this small minority, by whose success the character of the school was popularly estimated. The educational process was, in general, wooden and mechanical, such a thing as a Science of Education not being dreamt of. Memory was the omnipotent instrument of the intellectual instruction given, while physical, moral, and aesthetic training was unknown, because not recognised as a function of the school. True, Religious instruction was supposed to be amply secured by the daily Bible lesson and the immaculate repetition of the universal Catechism; but "Bible training," as begun by Stow, and the intelligent and emotional treatment of religious truth in school had not yet been conceived. The grand function of education, as the process of developing the whole faculties of the child and helping him towards the harmonious perfection of his nature, was little realised as an educational aim. As little was that of preparing him, by a full course of training and instruction, for the work of after life. Hence any extension of the number of subjects taught, in the ever-widening range of the modern scholastic curriculum, was not entertained, much less discussed; and science, in even its most popular forms, was seldom or never heard of within school walls. The schoolrooms were generally miserable in size, furniture, and physical requirements, and modern school supply would have been considered then, as it is in some quarters even now, absurdly extravagant. The school books were dry, hard and uninteresting, the Catechism and Proverbs being the simple food on which our youthful forefathers were mainly fed.

The need of any special professional training of the teacher in the principles and practice of his work had scarcely yet been imagined, nor had the possibility of damage to the complex and tender structure of the youthful organism, through want of professional aptitude, been perceived. The difficult problem of efficient and educative discipline had been little mooted, and the potent ferula was the synonym and type of the teacher's work, bearing universal sway; and any suggestion of ruling without it would have been scouted as a dream of Utopia or the Fortunate Isles.

Education was then entirely in the hands of the clergy, who no doubt acted up to the best of their lights, and had done eminent service to the instruction of the country in the past, but who rigorously opposed all change, as a reflection on the sanctity of "use and wont" and the wisdom of Knox. These good men were naturally suspicious of all innovations that might in any way pluck the power gathered for generations out of their hands. It had not yet dawned on the national mind, that it was any part of the duty of Government to educate the people, and that the power to hang, as Macaulay puts it, implies the power to prevent hanging, by education and other means. Thirty years of this century had gone, before Government granted any allowance to improve even the miserable school premises; forty years before, they appointed a Committee to help the education of the country; and it took seventy years before an Elementary Education Act was passed by Parliament.[1] Not one of the numerous educational societies and committees, which have done such admirable service to education, existed in the year 1800, or for several years after.

The foregoing is a simple statement of our educational position at the end of the eighteenth century. Ample testimony to its truth is borne by a host of writers and by the records of the time, and, not least, by George Combe, who laments the loss and pain of the school experiences through which he was obliged to pass. True, the old parochial system, under the scholarly and hardworking men who carried it on, had done good work in its time, better than had been done in most European countries; and, for what it then did, it deserves and should receive the fullest recognition. It was a system very well adapted for the period during which it had existed, but it had been, for a considerable time, insufficient for growing needs and enlarging intellectual and social life. There is no doubt that the end of last century was a time of singular apathy in the educational world, and, what was worse, of perfect contentment with the state of things. Hence every foot of advancement had to be fought for. All suggestions of improvement were indignantly and almost fiercely resisted. Ideas in education which are now the common property of the people, and which would seem to be axiomatic and universal, were then quite unknown even to the educated, and their introduction into school was vehemently opposed. In a word, the field traversed was narrow, the process mechanical, and the instruction verbal; the masses of our cities were unreached by the schoolmaster; a lethargic complacency with things as they were, characterised the conductors of education; and a grim opposition to change pervaded the country. The only energy exhibited showed itself in opposition to reform.

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[1] The first Government Grant was made in 1833 of £20,000, to assist in building schools; the Committee of Council on Education was appointed in 1839; the first Act for National Education in England was passed in 1870; the first Act for Scotland in 1872.

II. THE EDUCATIONAL REVIVAL AT THE BEGINNING OF THE PRESENT CENTURY, AND GEORGE COMBE'S PART IN IT.

But the darkest hour only ushers in the dawn, in human as in physical things. The beginning of this century witnessed the rise of a spirit of educational enlightenment and progress, which has issued in a true educational reformation, and which will yet achieve mightier things in the years to come. An outburst of educational talent then occurred, rivalling the literary and scientific genius which has shed such a glory on the nineteenth century. That period was brightened by the labours of many remarkable pioneers in education, both at home and abroad. With Pestalozzi at work at Neuhof, Fellenberg at Hofwyl, Froebel in Germany, Bell at Madras, Lancaster in the Borough Road, Birkbeck at Glasgow, Owen at Lanark, Wilderspin in Quaker's Lane, and Brougham in Parliament, the sleep of the past was broken, and an undying impulse given to education in various directions, which will expand with the years.

Certain well-marked features characterised this educational regeneration, of which it will be well briefly to speak, as in all these George Combe took a more or less active part. This will enable us also to estimate more truly the nature and extent of his work and influence.

1. *The extension of the means of education, so as to include the whole population of the country,* occupied much attention. One of the most interesting and pleasing movements in this direction was the attempt—so well begun by Raikes and Pounds in England and Stow in Scotland—at reaching the lower masses of our larger towns, by the foundation of Ragged and Infant Sunday Schools, in the great cities; and by Week-day and Infant Schools for the people, through the remarkable enthusiasm of Bell, Lancaster, Wilderspin, and others. The need, also, of extending the educational machinery, so as to include the whole country and thus make education truly national, began early to secure active effort and to be agitated by individuals and societies, by men outside and inside Parliament, till it issued in the discussion of a succession of Education Bills, which culminated in the Acts of 1870 and 1872. This question of National Education, more particularly in its phase of the education of the Labouring classes, was long debated and engaged the best efforts of eminent men. It met with strange opposition, however, in quarters that should have been more enlightened. At first strongly opposed by the Churches in both countries, the movement at length gained their ardent support, from motives of self-protection as well as from more enlightened views. By means pre-eminently of the British and Foreign, and the National Societies in England, the Education Committees in Scotland, and other powerful agencies, the Churches in both countries gave remarkable aid to the cause of National Education.

In this work of advocating the title of every man and woman to be educated and of helping towards its attainment, George Combe took a very active part. As already said, no one has more incontrovertibly proved the right of the whole people to be educated, on philosophical, social, and other grounds. No one has more clearly perceived the need of universal education, for every reason of individual, social, and political well-being and progress; and few have more convincingly and earnestly pleaded in its favour, both in this country and America. And his advocacy was carried on at a time when the battle for National Education with prejudice and tradition required to be fought against odds, and was fought by few. The greater part of this pleading was done when the subject was yet comparatively new to the country, and was only beginning to receive a feeble recognition in Parliament and in the press.

2. The all-important question of *How to improve the Process of education*, happily began to receive the attention of a few earnest and advanced thinkers, early in the century. The enthusiast of Yverdun, by his writings and labours, chiefly lighted the torch, which was kept burning by other distinguished workers, and has steadily increased in brightness. This part of the history of education is one of its most interesting and instructive portions, and embraces the enlightened and philanthropic labours of a host of eminent men, whose names will ever deserve honourable mention,—Pestalozzi, Fellenberg, Edgeworth, Lancaster, Bell, Owen, Wilderspin, Spurzheim, Wood, Stow, Birkbeck, Mayo, Pillans, Simpson, Mann, Ellis, Shuttleworth, Wyse, Arnold, Alcott, Woodbridge, Froebel, Richter, Barnard, Abbot, Hodgson, Spencer, Bain, Carpenter, Payne, and many more, who have advanced education in English-speaking countries; and Jacotot, Raumer, Diesterweg, Herbart, Beneke, Wehrli, Girard, Schmidt, and other remarkable men, who have contributed to a similar educational reformation on the Continent, but whose works are still very little known in England.[1] All these have

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[1] It has been a very great loss to English education that the writings of so many eminent foreign educators have been almost unknown in this country. Our neglect of Continental education has been remarkable. The Kindergarten of Fröbel, who began his educational labours in 1816, was only introduced into England in 1851 by the Ronges; Richter's "Levana," though written in 1806, was translated only in 1848; Jacotot, born 1770 and died 1840, was scarcely known till Professor Payne introduced him to his countrymen, in 1867; while of the great works of the others mentioned above, and of Francke, Basedow and the Philanthropin, Hecker, Gesner, &c., of the eighteenth centnry, no translation has yet appeared in Britain; though many of their contributions are now accessible through the enlightened labours of Dr Henry Barnard, of America, in the *American Journal of Education* and elsewhere. Happily for the country, the works and labours of Rousseau, Pestalozzi, Fellenberg, and Spurzheim were early known in English, the last having written his work on Education in our language.

laboured in different parts of the field and for different objects, too long to enumerate; and their ideas and efforts form a splendid chapter in European education. They have contributed extensive and most valuable materials towards educational history, philosophy, and practice, which have already done excellent service in helping to create the Science and Art of Education, based on the philosophy of human nature and human needs.

Among these reformers, George Combe takes no mean place. Many of the ideas thrown out by these students of education were merely the result of the hard-won experience of themselves and others, or of their natural insight into the problems presented. However valuable as contributions to educational progress, they were in most cases, like Pestalozzi's, more or less empirical and lacking in scientific form and value, though full of genuine perception of the nature of the subject. Few of them studied the subject in a philosophic spirit, and sought to place the principles and practice of education on a strict scientfic basis. In the more exact and scientific investigation into the problems of education, it is not too much to say that few have surpassed George Combe. His philosophical studies and natural endowments urged him to this special work, and supplied him with facts and principles, which he at all times sought to apply to education, and to make as practical and efficient as possible when thus applied. The result is that, though he has written no formal treatise on the subject, and was not, except in an amateur way, a practical teacher himself, yet he has left behind him a body of principles and practice, of great and permanent value, which must place him high amongst the scientific students of educational problems and the founders of the Science of Education. And the distinguishing merits of his views are their far-reaching nature, their pregnancy as principles, their philosophic basis, and their singularly clear and practical exposition.

The time at which he advanced these principles and brought the science he knew so well to bear on educational questions, should also be remembered. In the very first of his published works, the "Essays on Phrenology," in 1819, he has a special section on education, as interpreted by the new philosophy. In 1822, in his larger treatise, the "System of Phrenology;" in numerous articles in the *Phrenological Journal*, from its commencement, in 1823; in 1828, in the "Constitution of Man;" and throughout all his subsequent works, the principles of Mental Science are constantly brought to bear on the same subject. Before 1819, in this educational reformation, there had appeared in English, Rousseau's "Emile," in 1762; Kames' "Hints on Education," and Vicesimus Knox's "Liberal Education," in 1781; Bell's "Experiments in Education," in 1797, followed by his other works; Edgeworths' "Practical Education," in 1798; Lancaster's "Tractate," in 1803, and his "Improvements in Education," in 1806—none of which are *scientific* in spirit or treatment, however valuable, suggestive, and advanced.[1] One of the first scientific studies of education in English was Spurzheim's "Principles of Education," not published till 1821, to which George Combe confesses abundant obligations. George Combe was thus writing on the Science of Education in the early part of the century, when very few were engaged in that work; and there is no doubt that he was one of the earliest of the few investigators into the subject who, like Spurzheim, Spencer, Carpenter, Bain, and others, have endeavoured to render it truly philosophical, by basing it on the Science of Mind in connection with its Physiological relations.

3. *The need of improving and extending the range of the*

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[1] "Emile ou de l'Education" was first published, in French, at Amsterdam, in 1762; in English, in London, in the same year, in 4 vols., as "Emilius and Sophia, or a New System of Education;" again in London in 1763, and in Edinburgh in 1773 and 1783. Pestalozzi's "Leonard and Gertrude," though published in 1781, was not translated till 1825 (London, 2 vols.); his excellent "Letters on Early Education," addressed in 1818–19 to J. P. Greaves, were translated in 1827, the year of his death; and his valuable work, "How Gertrude teaches her Children," after 1830. Pestalozzi's system was first made known in England, in May 1826, by the Rev. Charles Mayo, in a lecture before the Royal Institution. Richter's "Levana," as already noted, written in 1806, was not translated till 1848; Simpson's "Philosophy of Education" and Stow's "Moral Training" appeared in 1834.

Subjects of Instruction began to claim attention, the more the true nature and aims of education were perceived. The meagre list of subjects taught in our common schools at the beginning of the century is surprising in the light of present practice, being confined to reading, repetition, spelling, writing, and arithmetic; dictation was unknown, and grammar, composition, geography, and history were not thought of for the common people; while the instruction of the more advanced was confined exclusively to Latin and other subjects required for the University. Not one of the attractive fields in the wide range of Science was opened in Common schools till far on in the century. Even in the Madras and Lancaster schools, the teaching to poor men's children of subjects now universal was at first specially deprecated, though, in these schools, more of them were gradually introduced.

Here George Combe did important service. He gave the question special study, and treated it to a great extent exhaustively, from the importance he attached to the training of all the faculties, by means of the subjects adapted for this end. This will appear from the short statement already given of his views, but still more from their details in this work. He has sketched the field in the broadest fashion, based on a study of the whole facts of the problem, internal and external, and has laid down a very complete outline of the whole course of school instruction. His discussion of the relations of Linguistic to Real education, in the contest waged in regard to them early in the century, is valuable, and contributed, in no small degree, to the present more adequate and advancing notions of the relative importance of these two fields of education.[1] His whole views in regard to the school curriculum deserve special attention at this period of controversy regarding the subjects of study, and particularly the principles on which his scheme is founded.[2]

Several subjects which he pleaded for, and in which he was one of the earliest workers, such as Physiology, are now taught in our schools, and receive Government grants; but in others, he is still in advance of general educational practice. In connection with certain of these, he occupies as yet, along with a few educationists, a unique position, viz., those by which a child is instructed in his own mental constitution, and in the principles of moral, social, and political life; that is, in the elements of Mental and Moral Philosophy, and Social, Economical, and Political Science. In advocating these as necessary subjects in a full course of school instruction, he has been ably supported by William Ellis, in the Birkbeck Schools, in which they form a regular and essential part of the instruction given, except Mental Science and the Relation of man's nature to the universe of which he forms a part, as already explained, which yet wait for recognition in our schools.[1]

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[1] See his views on this subject, chap. ii. p. 69.

[2] See these stated in Part II. p. 25.

Another excellent sphere of labour in providing broader instruction for the people, in which this friend of man was one of the earliest workers, was "the diffusion of useful knowledge," by means of popular lectures on scientific subjects. One of the first attempts at giving such lectures was made by Dr John Anderson, the founder of Anderson's College, in Glasgow, who, when appointed to the Chair of Natural Philosophy in Glasgow University, delivered a bi-weekly course to *classes* of working men, until his death in 1796. The first session, under Dr Garnett, of Anderson's College, founded in 1796, was attended by about a thousand of both sexes. In the same year, Dr Thomas Beddoes, the celebrated physician, and son-in-law of Edgeworth, began the system of true popular science lectures to audiences of both sexes in Bristol, by a course of Physiology. In 1800, that remarkable man, Dr Birkbeck, the successor of Dr Garnett, inaugurated a most successful course of popular lectures to the mechanics of Glasgow, on "the mechanical properties of solid and fluid bodies," Twenty-one years, however, elapsed before the idea was adopted by any other town, when Edinburgh led the way by founding, in 1821, "The Edinburgh School of Arts," "to supply instruction in the various branches of science which are of practical application to mechanics in their several trades." This was followed by the establishment, chiefly through Dr Birkbeck's efforts and influence, of "The Glasgow Mechanics' Institute," in 1823, the first of the kind in Britain; of "The London Mechanics' Institution," in 1824; and of similar institutions throughout the country, which rose with remarkable rapidity up to 1830.

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[1] See an account of the Birkbeck Schools and their course of study, p. 230.

These efforts were directed mainly to the instruction of the *men* of the labouring classes, but George Combe was the first to revive, in 1832, Dr Beddoes' practice of giving public lectures to *mixed* popular audiences, by courses on Phrenology, Morals, and Education, which gave rise, as already told, to the "Edinburgh Philosophical Institution" and "The Edinburgh Society for the Diffusion of Moral and Economical Knowledge." These lectures, as he informs us, were at first treated with ridicule, and were objected to as "improper and dangerous"! But they speedily led to "numerous successful courses of lectures in different parts of the country," till now they form one of the healthiest educational features of the age. George Combe's influence in these efforts at popular instruction is thus alluded to in the Fourth Report of the Directors of the "Philosophical Association":—"It is not doubted that the interest and discussion which have been excited by Mr Combe's talented lectures on Education, will be influential in bringing about the time when instruction in Natural Science will be everywhere considered an indispensable branch of elementary education."[1]

4. *The need of professional training for teachers* began early to be perceived in these attempts at educational reform. At the commencement of the century, the teachers of common schools were trained in the schools of Lancaster and Bell, fifty teachers having been prepared by Lancaster before 1810; this work becoming latterly fuller and more systematic, when these schools were managed by the British and Foreign Society, and the National Society. One of the first attempts at preparing teachers was made in Scotland, in Wood's Edinburgh Sessional School, established in 1813. This work was regularly carried

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[1] See Simpson's "Philosophy of Education," Appendix No. IV.

on there some years after its foundation, till it was transformed, in 1838, into "The General Assembly's Normal and Sessional School" in Market Street, Edinburgh. Almost from the beginning of his labours, from 1828, Stow invited teachers to witness his system. He gradually gave them more systematic instruction in its principles and in those of general education, and was one of the most earnest workers in this field, till he finally succeeded in founding, in 1838, the first Normal College in Scotland, if not in Britain; having trained, before this date, above a hundred teachers, who did immense good in disseminating his principles both at home and abroad.[1] In the Edinburgh Model Infant School, opened in 1829, of which George Combe was one of the founders and promoters, teachers were regularly prepared for Infant schools throughout the country. High praise is also due to Professor Pillans, of Edinburgh University, whose articles, in 1828, on the training of the teacher[2] did great service in drawing attention to the subject, and no doubt hastened the establishment of Normal Schools; but his higher idea of having this training carried on in the Universities, amidst the elements of broader culture and alongside of other professions, had to wait much longer for recognition, and only began to be possible with the recent foundaation of the Bell Chairs of Education in Edinburgh and St Andrews.[3] In 1836, the Home and Colonial School Society commenced the training of Infant school teachers, under the admirable superintendence of Dr. and Miss Mayo. The subject was agitated in Parliament from an early date by Brougham and others, but it was not till 1836 that any grant was allowed for the building of Normal Colleges. From that date, these institutions rose with surprising rapidity, so that at this time, within forty years, forty-seven such colleges exist in England and Scotland alone, founded, with Government assistance, by different religious bodies for the training chiefly of their own teachers. No unsectarian Normal School has yet been established in Britain.

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[1] See "Memoir of David Stow," by the Rev. William Fraser, p. 130 (London: James Nisbet & Co.).

[2] In the second of two letters to T. F. Kennedy, Esq., M.P., on "The Principles of Elementary Teaching," written in 1827, and published in 1828; now included in his "Contributions to the Cause of Education" (London: Longmans, 1856); and in an article in the *Edinburgh Review*, in No. 120, 1834, on "Seminaries for Teachers," also included in the same work.

[3] See the same training of teachers in Universities recommended at an early date by Mr Cunningham, the first Principal of Stow's Normal School, p. 649.

In this excellent field of educational work, George Combe took an early and active part, being amongst the first clearly to perceive the paramount necessity for such training as a vital element in any educational advance. On all occasions, he pointed out, with earnestness and enlightened insight, the need and nature of such professional preparation for the work of education. His perception of this necessity and of the character of the training required was unusually clear and advanced for the time; and he advocated a broader and more scientific course for teachers than has yet been adopted, especially as regards their careful study of the whole constitution of man and the laws of his nature, physical, intellectual, moral, aesthetical, and spiritual; and the best means of bringing these to bear on the development of the human being during his education. There is no doubt that, till this study forms one of the most prominent and extensive parts of the training of teachers, that training will remain unsound and imperfect at its very root; and the theory and practice of education imparted cannot be other than largely empirical, mechanical and unscientific. George Combe's advanced views on this head were due to his clear and philosophic perception of the real nature of the process and end of education, and his profound knowledge of man's constitution. He was one of the earliest to advocate and welcome the establishment of Normal Schools in Britain. He was also one of the first to urge their erection in America, in 1838; the first Normal School founded there being that of Lexington, in Massachusetts, in 1839. In his "Notes on the United States," issued in 1841, he published a full account, with plans, of Stow's Normal College, and was no doubt largely instrumental in leading to the foundation and development of such institutions in the United States, afterwards so ably carried out by the great educationist, Horace Mann.[1]

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[1] See notes on the establishment of Seminaries for Teachers, pp. 649 and 653.

5. *Religious Instruction, and the relation of the Churches to education generally* were, from the first, vexed and vexing questions. The churches had for generations conducted the education of the country, and it was natural that they should not, without a struggle, part with their power, and with a work which they deemed, from its nature and its relations to religion, peculiarly their own. They fought long and hard, and when at last roused from the lethargy of the past, they accomplished a wonderful amount of good in extending and improving education throughout the land. The motives for these abundant labours may not have been at all times the most disinterested, but good work was done. The churches were long much too strong for the friends of a non-ecclesiastical system under Government control to make much progress, but the national party has now succeeded in securing a National system, more or less complete, throughout the British Islands. In this contest, George Combe was the most prominent and powerful of the combatants, declaring equally against voluntary and church conduct of education.

The deeper question as to Religious Instruction in schools roused more opposition and acrimony than that of a National *versus* a Church system of education. As advocates of the separation of doctrinal teaching from national schools, the so-called "Secular" party have always been strongly opposed in this country, and subjected to much misrepresentation and even social persecution, as enemies alike of God, religion, and mankind. Still it has gradually grown in strength and influence, and has embraced men both inside and outside the churches, including in Scotland no less a churchman than Dr Chalmers.[1] Their idea has been, as already said, that Theology should be taught by the churches, each body making arrangements for the Theological instruction of its own adherents, and that other subjects alone should be taught in schools.

In Britain, George Combe was the chief advocate of these unpopular views regarding State and Religious Education, with the notable and essential difference, already pointed out, that he deemed all-important the careful cultivation, in school,

[1] See Dr Chalmers' latest views on this subject in Appendix No. VI., p. 732.

of the Moral and Religious faculties, through the usual studies, especially through science, "the secular order of God's providence," and contact with nature. From an early period, he advocated these views in his works, and in newspaper leaders, letters, and speeches. The establishment of the secular educational system of Ireland, in 1831 and subsequent years, was watched by him with the greatest interest and is frequently referred to in his writings. In 1838, he continued his advocacy in America, and had the satisfaction of seeing instituted in Massachussets, chiefly through the efforts of Horace Mann, a non-sectarian system, which he frequently described and held up for imitation in this country. Visiting various European countries, he examined and described their educational systems for the same end. His efforts to promote these views at home by pamphlets and otherwise, by the opening of the Williams Secular School, the first school of the kind in Scotland, and by the agitation, begun in 1850, have already been told.

The progress of these views led to the formation of the Glasgow Sunday Educational Association in 1849, for teaching "secular" subjects to the poorest and most neglected; and of the Glasgow Secular School Society, which established the Glasgow Secular Schools in 1849, and carried on one of them for twenty-two years, till the Act of 1872 rendered its existence, in the opinion of its supporters, no longer necessary; and to the foundation of similar schools in other towns in Scotland and England. George Combe also took great interest in the Secular Education movement in England, chiefly in the National Public School Association of Manchester, originally founded in 1847, which established the Manchester Model Secular School. He also visited and described, at different times, the Birkbeck and other schools in which this non-sectarian programme was carried out.

During his whole life, he was unwearied in his sympathies and efforts in promoting what he considered the only fair and efficient solution of the great question of "Religious" education, and, no doubt, did more than any other man to lead to the ultimate partial adoption of these views in the present

Education Acts and their conscience clauses, a success, which, though incomplete, would have surprised him, so much more rapid has it been than he anticipated.

In all these labours, George Combe and his friends encountered the strongest opposition, and had to bear much abuse and misrepresentation. The controversy was stormy, if not violent, and special letters, speeches, and books were written against them. These attacks, and the bad odour of his position, were borne by him with philosophic calmness, and evoked from him no recrimination, not even strong words, beyond a firm correction of error and a fuller discussion and explanation of the ideas of his party, in different forms, but chiefly in his larger work on "The Relation between Science and Religion," published in 1857.[1]

It is only justice to George Combe, moreover, to bear in mind his special views, as already explained, in regard to the function of the school in the culture of the Moral and Religious faculties. No misrepresentation could be farther from the truth than that he was not a religious man, for no part of his nature was stronger than his religious and moral faculties, which gave him, in this direction, a calm but undying enthusiasm ; and there never has lived a more earnest advocate of Religious and Moral training, as one of the most important elements in the education and progress of mankind.[2]

6. *The part played by Government in these educational struggles* is important and interesting. The controversy as to the relation that the Government of a country should bear to the education of the people was protracted and vehement, fiercely contested on both sides, the opponents of Government interference being long too powerful for the advocates of the right and duty of Government to educate the people. From the earliest attempt to rouse Government interest and obtain inquiry into popular education, in 1816, when Brougham succeeded in getting a committee appointed "to inquire into

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[1] See p. 586, for an account of the struggle.

[2] See chap. vii. p. 201, for some account of the "Secular School" movement, originated by George Combe, and the agitation for National Unsectarian Education of that time.

the educational condition of London, Westminster, and Southwark," the first of a long series of parliamentary movements, the story is one of alternate defeat and success. Another Committee followed in 1818, "on the education of the lower orders generally," the Charity Commissioners in 1819, and Brougham's first Education Bill in 1820. The establishment of the National System of Ireland, in 1831, was the first practical assertion of Government right to educate the people. The first parliamentary vote for assisting in building schools was passed in 1834. In 1839, the Committee of Council on Education was appointed, with Kay-Shuttleworth as its efficient secretary, and its celebrated Minutes for Annual Grants were issued in 1846. Bill after bill for education was thrown out by the House—Sir James Graham's Factory Bill in 1843, Pakington's, Russell's, and Cobden's Bills in 1856, and Marlborough's in 1868,—till a great though still incomplete victory was secured in the passing of the English Elementary Education Act in 1870, and the Scotch in 1872.

In this struggle, the combatants on both sides were many and strong, and George Combe was one of the earliest and ablest. His discussion of the relations of Government to the education of the people has never been surpassed for clearness and conclusiveness.[1] He was indefatigable in this work, and his assistance in any effort to secure the recognition of the duty of Government to educate the people was ever ready and valuable. Before going to America, in 1838, he advocated these views, and his appeals on this head to the American people were powerful and eloquent.[2] In 1841, after his return, he had the distinguished foresight to sketch out, in the *Edinburgh Review*, in July of that year, the machinery by which State education should be conducted, and the lines on which subsequent legislation has greatly gone.[3] He was the moving spirit in the great agitation which was carried on after this time in favour of National Unsectarian Secular Education under Government control; and this it became one of the great aims of the rest of his life to endeavour to achieve.[1] His pen was ever busy in this cause. He was intimately conversant with all the actors and agencies in favour of these views, both public and private, both inside and outside of Parliament; and his wise counsels and untiring efforts were enthusiastically devoted, amidst opposition and odium, to the advancement of these all-important social problems. The meetings which he so eloquently addressed, in 1851, in Edinburgh, Glasgow, Aberdeen, Paisley, Manchester, and elsewhere, and his admirable discussion of the whole subject in the *Westminster Review*, in 1852,[2] when he was above sixty years of age, are proofs of his continued enthusiasm in the great questions involved in National Education, and his dissatisfaction with the partial solutions then in progress. His views on the subject were and still are in advance of British practice on several points—as in regard to Free schools supported only by rates, universal compulsory education, and the total exclusion of doctrinal teaching from Public schools. There is no doubt that to George Combe personally, the country is more indebted than to any other single individual for the development of National Education as now greatly accomplished, and for the prevalence of broader views regarding the function of Government in the education of the people.

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[1] Especially in his pamphlet, "Remarks on National Education, being an Inquiry into the Right and Duty of Government to Educate the People," issued in 1846, of which five editions were required by 1848. See Part Fifth, chap. i. p. 541, for George Combe's views on the subject.

[2] Contained chiefly in his "Notes on the United States," published in 1841. See p. 518, *et seq.* for some of these appeals.

[3] In an article on "Education in America." See p. 586, on this point; and p. 607 *et seq.* for the greater part of the article itself.

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[1] See Part First, II. *supra*, for an enumeration of the pamphlets he issued, and the speeches he made, at this time.

[2] Article on "Secular Education," in the number for July 1852. See p. 587

IV.

GEORGE COMBE'S POSITION AS AN EDUCATIONIST.

The foregoing *résumé* of his views and efforts is sufficient to show, that George Combe was no ordinary worker in the educational field. His ideas on education are unusually broad, philosophical, and suggestive; and they are expressed, as the late Professor Nichol says,[1] with "exquisite clearness." His educational studies were pursued in a true spirit of scientific inquiry. His conclusions are the outcome of a rare acquaintance with man's whole constitution; and they form, altogether, a contribution to educational science and practice, of genuine insight into the problems, excellent practical suggestion, and unusual breadth and value. His labours in this field were abundant, various, and unwearied, inspired by a true enthusiasm of humanity; and they were carried on during the whole of a long life, amidst great misunderstanding and obloquy.

Yet eminent as were his services to education, George Combe has received scanty honour in the educational world, and his name is seldom mentioned as amongst its friends, even with the present growing interest in that subject. He has achieved great fame and notoriety in other spheres of labour, but in education, in which he so richly deserves it for good work accomplished, little or none.[2] Why is this? Chiefly because his services are greatly unknown. They could hardly have been otherwise to the present generation. His educational writings appeared mostly in an evanescent shape, in which they could scarcely live beyond his more immediate contemporaries. They have hitherto been little accessible, and they have never been presented till now in a collected form, so as to be seen in their full extent and value. As he wrote no special treatise on the subject, his name has not become associated with a known educational work, as Rousseau's with Emile, Pestalozzi's with Leonard and Gertrude, Richter's with Levana. Then the story of his life has only just appeared.[1] Thus his abundant labours in educational and social progress are little known. His unpopular views have, no doubt, to some extent, prevented full justice being done to him; while his fame or notoriety in other walks may also have overshadowed his deserts in this one, eminent as they have been.

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[1] In an appreciative account of George Combe's life, in the "Imperial Dictionary of Universal Biography," published by William Mackenzie, London.

[2] A striking proof of the neglect of George Combe's services to Education is the fact that in Kiddle and Schem's "Cyclopædia of Education," just published (New York, 1877: E. Steiger; London: Sampson Low & Co.)—a valuable work, the first of its kind in English, which embraces the history, theory, practice, and administration of Education, and the biography of educators, all over the world—George Combe has no place as an educationist! But this is scarcely surprising, when he is not even mentioned as a phrenologist, in the chapter on even that subject! In such a comprehensive work, of some 900 closely printed octavo pages, this singular neglect is inexcusable.

But his influence on the education of his own time, through his frequent writings and unremitting labours in the cause, was undoubtedly very great. George Combe was the true champion of certain higher ideas, when a champion was most needed. Even in his own lifetime, he saw many of these ideas, long fought for, incorporated with the educational systems of the day. Had he survived twenty years longer, he would have seen some of his most cherished thoughts, once most fiercely opposed, become greatly triumphant, and this with a rapidity that would have surprised himself. As he says, he "did not expect to see these principles generally reduced to practice in this age." His views "embraced centuries of time;" and "seeing the slow progress of the human race in the past, he did not anticipate miracles in the future," though he had faith in the truth and vitality of these principles to "vindicate their own might." Had he lived till now, he would have witnessed, in Scotland, the establishment of a National System of Education; universal School Boards, in whose hands, and not in Church or voluntary agencies, the management of National Education is placed; universal compulsion; the supreme conduct of National education vested in the State; the payment of Government grants for a wide range of Scientific instruction in our Common schools; the formation of a special department of Government to foster Science and Art; the gradual elaboration, on a scientific basis, of the Science of Education, and wonderful improvement in its spirit and practice; the development of the individual beginning to be more recognised as the higher function of the school; intelligence more cultivated there, and its cultivation encouraged by special grants; a rapidly increasing recognition of the need of professional training for the teacher; this training also initiated as a part of the work of the Universities, and increasing efforts made to have such an academical function universal; and the schools of his friend Mr Ellis, in which are embodied the greater part of his own ideas, still eminently successful. All these and other principles which he maintained with earnest life-long struggle, amidst opposition now scarcely credible, have been acknowledged as true and good, and their adoption is matter of fact. Not that George Combe was, or claimed in the remotest degree to be, their only champion or their only martyr, for happily he was but one of a small bright band that so laboured and suffered; but, beyond question, he was one of the most enlightened and most indefatigable, in his own sphere and for some of the most unpopular of the new ideas, and he endured more than most in their promulgation and defence.

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[1] "The Life of George Combe," by Charles Gibbon, in two volumes (London: Macmillan & Co., 1878); ably written, and important alike to the educationist, the philosopher, the reformer, and the philanthropist, and to all interested in human progress and in the growth of human well-being.

Even in labours and aims in which he stood very much alone, the country has made surprising advance, and not least in that which gained him most odium, the so-called "Secular" platform. The present conscience clause, and the non-recognition and non-inspection by Government of "Religious" teaching, though not all he would have thought desirable, are undoubtedly the beginning of final victory for Separatist views.[1] In this matter, however, it was unfortunate that the title "Secular" was adopted, as expressing the aim of what was a much greater endeavour. From various causes, the word soon became very obnoxious to the country in general, having gained a wider polemical and anti-theological application than it had when first used by George Combe, in a purely educational sense. The name denoted to him and to his friends much more than it did, and still does, even to the advocates of "secular" education in schools; embracing every subject, Religious training included, which related to the present "secular" world. In addition to its theological obnoxiousness, it also did great injustice to what was much higher and broader, by putting forward a minor peculiarity of these schools as the only distinction between them and others,—the real truth being, that they embraced a wider scheme of training and instruction than any other, nothing less than the outline of education sketched by George Combe. In now judging of what he and his friends intended in their schools, the mere "secular" peculiarity should be put aside as a smaller matter, in an educational point of view, and the broad education sought to be given there should receive the attention it undoubtedly deserves. It was a pity and a loss that, from various external causes, these schools were given up; for their scheme was broader and better than any Code will yet be for many a day. It is good, however, that so much of George Combe's outline is still embodied in the Birkbeck Schools, which stand greatly alone in this respect, and give the broadest training and preparation of children in the work and objects of life now existing; and it is devoutly to be wished, that they will be centres whence a truer and more adequate and practical education will pervade the country and regulate the curriculum of our schools.[1] Had religious polemics not been roused by the brand of "secularism" written on the very pediment of the schools of George Combe and his friends, much more good might have been achieved by them in this direction.[2]

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[1] George Combe, for the Williams School, and the promoters of the Glasgow and Manchester Secular Schools, made application to participate in Government grants, like other schools, which was refused because the Bible was not taught there, though Religious training received special attention.

In America, George Combe's influence has been greater and wider than at home, because, in a new country, his views had to encounter less existing tradition and prejudice. His enlightened advocacy of a better education, and of the technical training of teachers there, had great influence in improving education generally, and of leading to the establishment of Normal Schools. There happily, too, his ideas and spirit were continued, and issued in greater things, in what was truly an educational reformation, through the admirable efforts of his friend, Horace Mann, one of the greatest educationists of his time.[1] These two eminent men became acquainted in America, and remained ever afterwards in terms of the closest friendship and esteem, Mr Mann frequently acknowledging his obligations to George Combe in the most generous manner.[2]

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[1] See p. 230 and p. 252, for the history and characteristics of these schools.

[2] See p. 257, and letter from Mr W. Mattieu Williams, in the Appendix, p. 718, on the word "Secular."

George Combe's influence on education in the future ought to be, and no doubt will be, greater than it has been in the past, especially now that his extensive and admirable contributions to that subject are accessible in a systematic form. The ideas here embodied should be welcomed by all students of education, as throwing the clearest light on most of the field. Many of these are yet so far before present knowledge and practice, and are so sound and philosophical in themselves, that they should lead to future advance, and point out the path to be pursued. They are also the more

[1] His Life and Works, edited by Mrs Mann, are most valuable contributions to education, embodying, as they do, his excellent labours, speeches and reports on the subject. His well-known Educational Tour in Europe, the best edition of which is edited by Professor Hodgson, first published in 1846, should be in the hands of every teacher; a new edition should be issued.

[2] In his Life, p. 47, the following tribute occurs:—"Mr Mann looked on his acquaintance with Mr Combe and his works as an important epoch in his life. That wise philosopher cleared away for ever the rubbish of false doctrine which had sometimes impeded its action, and presented a Philosophy of Mind that commended itself to his judgment: and yet there was not a servile surrender to his views; for although he considered Mr Combe his master in reasoning powers, he did not follow him to all his conclusions." Mr Mann himself, writing to George Combe, says, "There is no man of whom I think so often; there is no man of whom I write so often; there is no man who has done me so much good as you have. I see many of the most valuable truths as I never should have seen them but for you, and all truths better than I should otherwise have done." (Life, p. 518).

valuable, that they form one of the few treatments of the subject resting on a scientific basis and conducted in a scientific manner—on the study of the whole physical and mental constitution of man; and they should thus furnish excellent materials towards constructing the future Science and Art of Education, which are still only in their infancy.

In fine and by way of summary estimate of his educational position, George Combe has, beyond all question, done excellent service to education by pen, voice, and action in the past, and he will exert a wider and deeper influence in the years to come. He was the right man, in the right place, and at the right time. It may seem that, had he appeared a little later, his success might have been greater, as his views would have encountered less opposition than they did at a time so educationally blind and so theologically rigid. We are apt so to reason regarding strong men who have had largely to create and to educate their own audience, which could not have existed afterwards, had it not been prepared by themselves to accept views so obnoxious to their contemporaries. George Combe was in his true place in the van of educational reform, as in other fields bearing on the progress of thought and well-being. He had the real spirit of a pioneer, the stuff that makes the champion of new ideas, possessing the fearless courage of his opinions — opinions never uttered till fully conquered by himself — filled with deathless enthusiasm, generously tolerant of difference of opinion, grandly forbearing under even merciless attack,[1] sustained by calm philosophy born of invincible faith in the might of truth, and inspired with a genuine, all-embracing philanthropy. His range of mental development may be considered as not so wide as that of some less eminent men, but, within that range and on his own ground, George Combe was peerless.

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[1] In a speech made in New York, in March 1840, speaking of the opposition he had encountered, George Combe said: "Many were the shafts of ridicule that were hurled against me, and bitter the taunts poured forth by a hostile press; but they never penetrated to my soul, disturbed my peace, or impeded my prosperity. I mention this, not in the spirit of vain-glory, but to confirm the young in the assurance that the path of truth and independence may be safely trodden, even against a world in arms, if courage and perseverance be added to prudence in the advance."

His influence as a scientific educationist, helping to systematise educational facts and principles and to place these on a philosophic basis of pure induction, that of the study of the human constitution in its broad integrity, is still almost entirely a thing of the future. His life and work were too polemical, the strife was too keen, to allow his calmer and deeper suggestions to be seen and felt. The philosopher was hidden in the combatant, and his best thoughts on human well-being were conveyed through a suspected and misrepresented philosophy. Not being accessible in any proper form for general use, his educational works have had too little opportunity of doing the good they are fitted to do; while the prevalent mistaken notions of the man and his opinions have no doubt farther obscured their merit.

Nor have educationists themselves been hitherto sufficiently enlightened, or sufficiently studious and scientific to look deeply into the philosophy of their own work. The growth of education has been too rapid, the issues at stake too controversial, to permit adequate attention to be paid to the higher elements of the subject. But a calmer time is beginning to dawn on the educational world, better adapted for the elaboration of the Science and Art of its own work on a true basis of scientific investigation and scientific method; and more valuable and more abundant materials now exist for this purpose than at any former period. And there are most hopeful signs that these are beginning to receive the more earnest attention which their vital bearing on future educational progress demands. When the materials for this great task, contributed by a long succession of eminent workers in this important field of inquiry, from Plato to Payne, are gathered up, George Combe's studies and exertions will be found to have been of sterling worth. And when the true history of education—a subject that concerns mankind as well as the teacher—comes to be written, he *will* receive his well-earned place beside the greater reformers of education, and a special position among the smaller band of its scientific students. The present issue of his works is an attempt to do George Combe more justice in this less known but most honourable field of his many labours; and, through their means, to contribute towards the final solution of important educational questions, and the development of the Educational Science of the future, so inseparably bound up with human happiness and human progress.

Res non Verba Quæso.

George Combe's Motto.

We must teach the child WHAT IT IS, WHERE IT IS, WHAT IT OUGHT TO DO, *and* HOW IT SHOULD DO IT, *in order best to fulfil the objects of its existence.*

George Combe.

Je vous prêche un art difficile ; c'est de gouverner sans préceptes, et de tout faire en ne faisant rien.

Rousseau

PART FIRST.

WHAT IS EDUCATION?

ITS NEED AND NATURE.

PART FIRST.

CHAPTER I.

THE NEED OF EDUCATION INHERENT IN MAN'S CONSTITUTION.

Man and his varied faculties.

Let us contemplate Man, and his adaptation to the external creation. The world was inhabited by living beings, and death and reproduction prevailed before Man appeared. The order of creation seems not to have been changed at his introduction, but he appears to have been adapted to it. He received an organized structure, and animal instincts. He took his station among, yet at the head of, the beings that existed at his creation. Man is, to a certain extent, on a level with the lower animals in his structure, powers, feelings, and desires, and is adapted to a world in which death reigns, and generation succeeds generation. This fact, although so trite and obvious as to appear scarcely worthy of being noticed, is of importance in treating education; because the human being, in so far as he resembles the inferior creatures, is capable of enjoying a life like theirs; he has pleasure in eating, drinking, sleeping, and exercising his limbs; and one of the greatest obstacles to his improvement is, that many of the race are contented with these enjoyments, and consider it painful to be compelled to seek higher sources of gratification. But to man's animal nature have been added, by a bountiful Creator, moral sentiments and a vastly superior endowment of the reflecting faculties, which not only place him above all other creatures on earth, but constitute him a different being from any of them, a rational and accountable creature. These faculties are his highest and his best gifts, and the sources of his purest and intensest pleasures. They lead him directly to those important objects of his existence,—obedience to God, and love to his fellow-men. But this peculiarity attends them, that while his animal faculties, which are necessary for his preservation, act powerfully of themselves, his moral and rational faculties require to be cultivated, exercised, and

His higher faculties require training.

instructed, before they will yield their full harvest of enjoyment. In regard to them, Education becomes of paramount importance.

Man's relations to external nature.

The Creator has so arranged the external world as to hold forth great inducements to man to cultivate his higher powers, nay, almost to constrain him to do so. The philosophic mind, in surveying the world as prepared for the reception of the human race, perceives in external nature a vast assemblage of stupendous powers, too great for the feeble hand of man entirely to control, but kindly subjected, within certain limits, to the influence of his will. Man is introduced on earth apparently helpless and unprovided for as a homeless stranger; but the soil on which he treads is endowed with a thousand capabilities of production, which require only to be elicited by his intelligence to make it yield him the richest returns. The impetuous torrent rolls its waters to the main; but as it dashes over the mountain cliff, the human hand is capable of withdrawing it from its course, and rendering its powers subservient to his will. Ocean extends over half the globe her liquid plain, in which no path appears, and the rude winds oft lift her waters to the sky; but, there the skill of man may launch the strong-knit bark, spread forth the canvas to the gale, and make the trackless deep a highway through the world. In such a state of things, knowledge is truly power; and it is obviously the interest of human beings to become acquainted with the constitution and relations of every object around them, that they may discover its capabilities of ministering to their own advantage. Farther, where these physical energies are too great to be controlled, man has received intelligence by which he may observe their course, and accommodate his conduct to their influence. This capacity of adaptation is a valuable substitute for the power of regulating them by his will. Man cannot arrest the sun in its course, so as to avert the wintry storms, and cause perpetual spring to bloom around him; but, by the proper exercise of his intelligence and corporal energies, he is able to foresee the approach of bleak skies and rude winds, and to place himself in safety from their injurious effects. These powers of controlling nature, and of accommodating his conduct to its course, are the direct results of his rational faculties; and in proportion to their cultivation is his sway extended. Man, while ignorant, is in a helpless condition. But let him put forth his proper human capacities, and he will then find himself invested with the power to rear, to build, to fabricate, and to store up provisions; and, by availing himself of these resources, and accommodating his conduct to

His rational faculties increase his power over nature.

the course of nature's laws, he will be able to smile in safety beside the cheerful hearth, when the elements maintain their fiercest war abroad.

His relations to other beings; knowledge necessary to regulate these.

Again: We are surrounded by countless beings, inferior and equal to ourselves, whose qualities yield us happiness, or bring upon us bitter evil, according as we affect them agreeably or disagreeably by our conduct. To draw forth their excellencies, and cause them to diffuse joy around us—to avoid touching the harsher springs of their constitution, and exciting painful discord—it is necessary that we should know their nature, and act with a habitual regard to the relations established by the Creator between them and ourselves.

Education necessary to interpret the external world;

Man, ignorant and uncivilized, is prone to become ferocious, sensual, and superstitious. The external world affords some enjoyments to his animal feelings, but it often confounds his moral and intellectual faculties. Nature exhibits to his mind a mighty chaos of events, and a dread display of power. The chain of causation appears too intricate to be unravelled, and the power too stupendous to be controlled. Order and beauty, indeed, occasionally gleam forth to his eye from detached portions of creation, and seem to promise happiness and joy; but more frequently, clouds and darkness brood over the scene, and disappoint his fondest expectations. Evil seems so mixed up with good, that he regards it either as a direct product or an inseparable accompaniment of nature's arrangements. Nature is rarely contemplated with a clear perception of its adaptation to the purpose of promoting the enjoyment of man, or with a well founded confidence in the wisdom and benevolence of its Author. Man, when civilized and illuminated by knowledge, on the other hand, discovers in the objects and occurrences around him a scheme beautifully arranged for the gratification of his whole powers, animal, moral, and intellectual; he recognizes in himself the intelligent and accountable subject of an all-bountiful Creator, and in joy and gladness desires to study the Creator's works, to ascertain their laws, and to yield to them a steady and a willing obedience. Without undervaluing the pleasures of his animal nature, he tastes the higher, more refined, and more enduring delights of his moral and intellectual capacities. He then calls aloud for Education as indispensable to the full enjoyment of his rational powers.

And to the enjoyment of his higher faculties.

If this representation of the condition of the human being on earth be correct, we perceive clearly the unspeakable advantage of applying our minds to gain knowledge, and of regulating our conduct according to rules drawn from acquired information. Our constitution and our position equally imply, that the grand object of our existence is, not to remain contented with the pleasures of mere animal life, but to take the dignified and far more delightful station of moral, religious, and rational occupants of this lower world.

The kind of education he requires.

Education, then, means the process of acquiring that knowledge of our Creator, of ourselves, and of external nature, and the formation of those habits of religious, moral, and intellectual enterprise and activity, which are indispensable to the evolution of all our faculties, and to the performance of our parts, with intelligence and success, in such a scene as I have described.

These views may appear to many persons to be so clearly founded in reason, as to require neither proof nor illustration; but there are others who are little familiar with such contemplations, and to whom a few elucidations may be useful. As the latter are precisely those whom I desire to benefit, I solicit permission to enter into a few details, even at the risk of appearing tedious to the more enlightened among my hearers.

Man's constitution compared with that of the lower animals:

To understand correctly the constitution of the human mind, and its need of instruction, it is useful to compare it with that of the inferior animals. The lower creatures are destined to act chiefly from instinct; and instinct is a tendency to act in a certain way, planted in the animal by the Creator, without its knowing the ultimate design, or the nature of the means by which its aim is to be accomplished. A bee, for example, constructs its cell in conformity with the most rigid principles of mathematical science, according to which it is necessary that the fabric should possess a particular form, and be joined to other cells at a particular angle, in preference to all others, in order to give it the greatest capacity and strength, with the least possible expenditure of material. The creature has no knowledge of the principles of mathematics such as man possesses; but it acts in accordance with them, by an impulse obviously planted in it by the Author of its being. Man is not directed by unerring impulses like this. Before he could construct a similar fabric with success, it would be necessary for him, by means of observation and experiment, to become acquainted with the nature of the materials to be employed, and to form a clear conception of the mode of adapting them to the accomplishment of his design. A mother, among the inferior animals, is impelled by pure instinct to administer to her offspring that kind of protection, food, and training, which its nature and circumstances require; and so admirably does she fulfil this duty even at the first call, that

In what he is inferior to them;

human sagacity could not improve, or rather could not at all equal, her treatment. These animals proceed without consciousness of the wisdom displayed in their actions; they do not act from knowledge and design. Wherever design appears, there must be intelligence; yet the wisdom resides not in the animals, but in their Author. The Creator, therefore, in constituting the bee, possessed perfect knowledge of the external circumstances in which he was about to place it, and of its relations, when so placed, to all other creatures and objects; and conferred on it powers or instincts of action adapted to secure its preservation and enjoyment. Hence, when enlightened men contemplate the habits and powers of animals, and compare them with their condition, they perceive wisdom and benevolence conspicuously displayed by the Creator. Man also has received instincts which resemble those of the lower animals, such as the love of sex, of offspring, of society, and of praise, the instinct of resentment, and many others; by the exercise of which, as I have said, he may maintain his purely animal existence, with very little aid from education.

In what he is superior to them.

Reason necessary for his guidance.

But he is distinguished from the inferior creatures. 1st, By the possession of moral sentiments—such as the love of justice, of piety, of universal happiness; and, 2dly, By great superiority in the reflecting faculties, fitted to acquire knowledge of the qualities and modes of action of external objects, and of their effects. These two classes of faculties render man a different being from the inferior creatures. The function of reason being to acquire knowledge of qualities and modes of action and effects, Man is not prompted to follow the most beneficial mode of promoting his own happiness in the direct and unreflecting manner in which the inferior creatures are led to that end. The human female, for example, because she possesses the innate love of offspring, will feel as lively joy at the birth of a child and as warm an attachment towards it, and will as ardently desire its welfare, as the most devoted among the inferior creatures. But, devoid of all instruction and experience, she will not administer towards it the same perfect treatment, with reference to its wants, as the mother in the lower scale; and for this reason, that, in the animal, the instinct is directed to its proper mode of gratification by the Author of Nature: He prompts *her* to do exactly what His wisdom knows to be necessary; whereas, in the human being, the propensity is left to the guidance of reason. Woman is commanded to exert her intellect in studying the physical and mental constitution of herself and her offspring, in order that she may rear it with success while it needs her assistance; and if she shall neglect to perform this duty, she and it may suffer evil in being exposed to the unfavourable influence of external objects and beings, to the action of which, in her state of ignorance, she does not know how to adapt her conduct.

Human feelings are blind and require enlightenment.

Many persons are not aware that human feelings are more blind than those of the lower animals, and that they lead to worse results when not directed by reason. They imagine that if they possess a feeling strongly, such as the love of offspring, or the love of God, they cannot err in the mode of gratifying it; consequently, they act with all the energy of impulse, and all the blindness of infatuation. A mighty change will be effected in human conduct when the people at large become acquainted with the indispensable necessity of knowledge and reflection to the proper direction of their feelings, and with the fact that knowledge is the grand element without which reason cannot be sufficiently exerted.

Man, therefore, being an improvable being, has been furnished with reason, and been left to discover, by the exercise of it, his own nature, the nature of external objects, and the relations between himself and them, and to adapt the one to the other in this temporal sphere for his own advantage. When he shall do so, and fulfil also his moral and religious duties, he will assume his proper station as a rational being. The only limit to this proposition is, that each of his faculties, bodily and mental, and every external object, have received a definite constitution, and are regulated by precise laws, so that limits have been set to human aberration, and also to human attainments; but, within these limits, a wide scope for producing happiness, by harmonious and wise adaptations, or misery, by discordant and foolish combinations, exists.

Man has a capacity of improvement.

I do not predicate *what* degree of perfection man is capable of attaining on earth by these means. Looking at the condition of the inferior animals, I should not expect optimism, because disease and death are incident to them all; but, on dispassionately comparing the enjoyments of the inferior creatures, in relation to their natures, with the past and present enjoyments of the human race, in relation to their superior capacities, I fear that man does not surpass them to the extent which he ought to do, if he made a proper use of the means fairly in his power of promoting his own happiness. Comparing the civilized Christian inhabitants of modern Europe, with the ignorant, ferocious, filthy, and helpless savages of New South Wales, we perceive a vast advance; but I do not believe that the limits of attainable perfection have yet been reached even by the best of Europe's sons. All, therefore, that I venture to hope for is, that man, by the proper employment of the means presented to him, may arrive at last at a condition of enjoyment of his mortal existence, as great, in relation to his rational nature, as that of the lower animals is in relation to their more limited natures. This is no more than saying, that the Creator has made man as perfect as a reasonable being, as He has made the lower animals as instinctive creatures.

Education is necessary for his improvement and development.

If, then, man, by his constitution, be an intelligent, moral, religious, and, therefore, an improvable being, but born without knowledge, *he must be instructed, and trained to act in harmony with the order of nature, of which he forms a part*, as the first stage in his progress towards enjoyment. In other words, HE MUST BE EDUCATED.[1]

There is a legitimate sphere of action for every function of the body and every faculty of the mind; and it is only the abuses of these, through ignorance and unfavourable influences, that constitute error and crime, and lead to misery. There was in man, therefore, from the first, and there is now in him, a capacity for education, by the development and right direction of his natural gifts; and both his own constitution and that of the external world are arranged with reference to that development, to render him prosperous and happy in proportion as he pursues it in a right direction, or miserable if he neglects it, or pursues it in a wrong way.[2]

Reasons for the different views of education generally entertained.

What is the Use of Education? It is often difficult to give a satisfactory answer, not because education is of no use but because utility itself is viewed so differently by different individuals, that it is impossible to show that education is calculated to realize the precise advantage which each aspires to attain. Besides, education is calculated to correct so many errors in practice, and to supply so many deficiencies in human institutions, that volumes would be necessary to render its real importance thoroughly conspicuous.

Instead of obtaining from education a correct view of the nature of man, and of the objects and duties of life, each individual has been left to form, upon these points, theories for himself, derived from the impressions made upon his own mind by the particular circumstances in which he has been placed. This has arisen from the want of a practical philosophy of mind. No reasonable person assumes himself to know the sciences of Astronomy, Chemistry, or Physiology, without study and an appeal to nature; yet, in the department of Mind, the practice is different. Almost every one has a set of notions of his own, which, in his mind, hold the place of a system of the philosophy of man; and, although he may not have methodised his ideas, or even acknowledged them to himself as a theory, yet, to him, they constitute a standard by which he practically judges of all questions in morals, politics, and religion. He advocates whatever views coincide with them, and condemns all that differ from them, with as little hesitation as a professed theorist himself, and also without trying his own principles by any natural standard. In short, the great mass even of educated men, in judging of questions relating to morals, politics, and social institutions, proceed too much on first, or even on accidental, impressions. Hence, public measures, whether relating to education, religion, trade, manufactures, provision for the poor, criminal law, or to any other of the interests of society, instead of being treated as branches of one general system of economy, and adjusted on scientific principles, each in harmony with the others, are too often supported or opposed on narrow and empirical grounds,—and discussions regarding them occasionally call forth displays of ignorance, prejudice, and intolerance, calculated greatly to obstruct the progress of improvement. Indeed, general agreement on questions of which the first principles must be found in the constitution of human nature will be impossible, even among sensible and virtuous men, so long as no standard of mental philosophy is admitted to guide individual feelings and perceptions. Hence, when a young man, educated as a merchant, asks the use of any thing, the answer which will most thoroughly interest him, will be one showing how much wealth may be acquired by it. The sincerely religious will acknowledge that to be most useful which tends most directly to salvation; while the votaries of fashion will admit the utility of such pursuits only as are recognized by the refined but frivolous and generally ill-informed circle, which to them constitutes the highest tribunal of taste. To expound to such persons principles affecting the general interests of society, and to talk to them of schemes for promoting the happiness of human beings, in their various conditions of husbands and wives, parents and children, masters and servants, teachers and

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[1] Lectures on Popular Education, p. 4.

[2] Remarks on National Education, p. 29.

Each man has his own philosophy of mind.

The need of a standard of philosophy.

pupils, governors and subjects, appears like indulging a warm imagination in fanciful harangues. They are of opinion that the experience of six thousand years is sufficient to show that man is not destined in this life to be different from what he has always been and now is; and that any measures pretending greatly to improve his condition, however desirable, are not at all to be believed in by sensible and practical people. This state of things could not exist if education were founded on a true system of human nature, and an exposition of its relations to the external world.[1]

The resp bility of par in the ed tion of children.

Next to the duty of providing for the physical health and enjoyment of their children, parents are bound to train and educate them properly, so as to fit them for the discharge of the duties of life. The grounds of this obligation are obvious. The human body and mind consist of a large assemblage of organs and faculties, each possessing native energy and an extensive sphere of action, and capable of being used or abused, according as it is directed. The extensive range of these powers, a prime element in the dignity of man, renders education exceedingly important. As parents are the authors and guardians of beings thus endowed, it is clearly their duty to train their faculties, and to direct them to their proper objects. "To send an uneducated child into the world," says Paley, "is little better than to turn out a mad dog or a wild beast into the streets."[2]

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[1] Lectures on Popular Education, p. 1. [2] Moral Philosophy, Lect. vi.

CHAPTER II.

THE NATURE AND OBJECTS OF EDUCATION.

1. EDUCATION INCLUDES BOTH TRAINING AND INSTRUCTION.

Training and instruction both necessary in education;

UNDER the general term Education, two very different processes are frequently confounded—namely, *training* and *instruction*. Training, in reference to education, means strengthening and enlivening, by means of exercise, the mental functions; while instruction refers to the communication of knowledge.[1]

This world appears to me to be a vast theatre constituted for exertion, in which enjoyment is the natural consequence of industry, morality, and intelligence; and suffering that of ignorance, vice, and sloth. The constitution of the world, physical and moral, that of the human mind and body, as well as the relations between them, are fixed and determinate; and man becomes prosperous and happy in proportion to the degree in which his social institutions and personal conduct harmonize with these unchangeable elements of nature. Each individual of the race is born ignorant of everything; but capacities are bestowed on him to learn all that is essential to his welfare. The mighty machinery of nature, physical and moral, is constantly revolving within him (in his own mind and body), and around him; and he cannot by possibility avoid experiencing its influence. To be prosperous, he must adjust his conduct and position to its action, and he cannot do so unless he know it; learn, therefore, he must, or suffer. Education means *teaching* the individual what it concerns him to *know* relative to his own constitution, and that of the moral and physical world in which he is destined to live and act; and it includes *training* him to habits of action suitable to that destination.[2]

And for prosperity and happiness.

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[1] Preface to Caldwell's "Thoughts on Physical Education"; (Edinburgh, Maclachlan and Stewart.)

[2] Remarks on National Education, p. 1.

Education can alter the structure neither of the physical world, nor of our own organization. The utmost that it can do for us is to make us acquainted with that structure, with our own organization in relation to it, and how we should conduct ourselves, so as to secure that amount of well-being which, as far as our knowledge tells us, is attainable; training us at the same time to the habits leading to that conduct which knowledge has recommended for adoption.[1]

We should train to *do* more than to *know*.

Whatever knowledge we acquire must not be allowed to terminate as mere barren intellectual conceptions, freezing in the brain, and fostering only self-esteem, without vivifying the moral sentiments or subduing the propensities; it must be connected with life to be rendered the force of all the faculties, and then education will produce its full effects.[2]

In framing books for schools, it would be well to ask themselves, "What does this book teach the people to *do?*" It is good to *know*, but it is better still to *act*.[3]

The necessity of training lies in man's constitution.

The importance of teaching knowledge is evident; but the necessity for *training* is less understood. It arises from the dependence of the mind in this world, on physical organization for its powers of acting. The brain is the material instrument by means of which the mind acts, and it consists of a variety of parts, each connected with a special mental power. It is subject to the same organic laws as the other parts of the body. If we should confine a man for the first twenty years of his life to a dungeon, without exercise and employment, we should find, on bringing him into the active world of light and life, that he could not see distinctly, could not judge correctly of the distance of objects by their sounds, could not walk steadily, and scarcely could make any exertion with his arms and hands. The cause of his defects would be found in the circumstance; that his organic structure had been left feeble and undeveloped through want of exercise; and that his various senses and muscles (which, although distinct in themselves, are all framed to co-operate and assist in prosecuting general aims) had never been accustomed to act in combination. Such a being, therefore, when first introduced into active life, would be helpless, bewildered, and unhappy.

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[1] Speech at a meeting of the Working Classes in Paisley, Sept. 29, 1851; from *North British Daily Mail.*

[2] From MSS.

[3] Notes on America, vol. iii. p. 100.

The effects of the want of Training:

(1.) On the intellectual faculties;

The uneducated and untrained peasant is in a similar condition in regard to his mental organs. Not only is he ignorant, but his mental organs are dull, feeble, and incapable of continued exertion; and he, therefore, cannot think continuously, or act perseveringly. We may give him instruction, but it does not penetrate into his inactive brain, and it is not reproductive of thought and action. I have occasionally hired into my service individuals who have not learned to read and write, and the effects were most conspicuous. The ears heard, and the eyes saw, and the understanding appeared to comprehend; but I soon discovered that the comprehension was imperfect and inexact, that the retention was momentary, and the power of reproduction, combination, and modification, almost *nil*. I lately conversed with an engineer and machine-maker who employs 120 workmen, and he told me that he had repeatedly taken into his workshop uneducated and untrained labourers with a view to teaching them some simple processes in his trade, but had found that the lesson of yesterday was not retained in the mind till to-day; that no spontaneous suggestion presented itself, even when circumstances rendered it evident to a trained understanding; and that their labour, in consequence, was without value in any department of skilled art. Their muscles had been trained to act, almost without the direction of their brains; and beyond labour which muscles could execute independently of intelligence, they were powerless.

(2.) On the moral faculties;

This is the intellectual condition of uneducated man. But the intellect constitutes only a small, although an important portion of the mind: Man is endowed, besides, with moral sentiments and animal propensities, depending, like his intellect, on cerebral organs for their powers of manifestation. Each organ is more or less capable of action in proportion to its size, temperament, and the *training* which it has received. In a rude and uncultivated condition of the intellect, the moral sentiments are left without stimulus and direction. These sentiments produce the emotions of benevolence and veneration, and the love of justice. Prosperous external circumstances, generally speaking, are favourable to their development. A man steeped in poverty and oppressed by want, finds his selfish faculties excited, and lacks not only moral stimulus, but physical means for practising the benevolent virtues. One buried in ignorance cannot exercise a well-directed and enlightened veneration; and one in whom all the higher and disinterested powers of the mind are dormant, cannot be expected to comprehend the dictates of truth, or to practise the principles of justice.

(3.) On the animal propensities.

But the third class of faculties, the animal propensities, are not equally quiescent in the uneducated individual; because, on their prompt action, the preservation of life and the supply of our bodily wants have been made by nature immediately to depend. The external objects which act as their stimulants everywhere abound. The struggle for food, raiment, and shelter, in which the uneducated man is, in the general case, constantly engaged, calls forth his Combativeness and Destructiveness, his cunning and his obstinacy, into abiding activity; it *trains them* to vigour, and renders them prompt to action.

Such, then, is the uneducated man, in his general condition. I speak, of course, of average individuals, for there are persons born in all ranks of life whose inherent superiority of mind enables them triumphantly to surmount every adventitious obstacle to their development and elevation. These, however, are few in number; and as nature has rendered them in a great measure independent of social aid, they do not form the objects of our present consideration.[1]

Instruction; in what it ought to consist.

Let us inquire *What constitutes Instruction;* the necessity for it is obvious. We must recollect that the propensities and sentiments are all blind. Philoprogenitiveness gives love of children, but it does not tell what is the best way of managing them. Veneration gives us a tendency to revere, but it does not inform us what are the true objects of respect or worship; but man is sent into this world with a combination of faculties admirably fitting him to attain this knowledge. An uninstructed man is one in whom all the faculties work at random. Instruction consists in becoming acquainted, first with ourselves, and then with the world without, with which we are in relationship, and with the mode of so adapting our conduct to external circumstances as to produce the greatest amount of enjoyment to ourselves and benefit to others.[2]

Instruction means presenting, to the mental faculties which God has made, the objects, the real things, in creation which He has adapted to them. This instruction is not intended to supersede moral and religious training, but to supplement it, and render it effective. Indeed, it is not so much the mere details of chemistry, of natural philosophy, or of any other science that I value, as the strengthening of the intellect and the enlargement of the understanding which follows from these studies, and which enable the educated man to carry out his moral, intellectual, and religious convictions into action.[1]

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[1] Remarks on National Education, p. 3.

[2] American Lectures, edited by Boardman, p. 342.

Education ought to impart Real knowledge.

One great object of education is the attainment of *knowledge itself.* If the season for obtaining *real* knowledge be dedicated to the study of languages, the individual will enter on active life in a state of qualification for practical business similar to that of a man for the practice of architecture who should have completed only his studies in drawing. He will be deficient in many acquirements that would be substantially useful for the preservation of health and the successful conducting of affairs.[2]

2. DEFINITIONS OF EDUCATION, VIEWED AS TRAINING.

The principle of George Combe's definitions.

When George Combe defines education solely as Training, which, as a philosopher, he inclines to do, he really includes Instruction in the definition. Training is the process by which *all* the faculties are to be educated. These faculties can be truly educated only by exercising them on their proper objects, that is, the objects on which they naturally act, and by which they are stimulated into activity. The observing or knowing faculties can only act when *their* appropriate objects are presented, that is, when knowledge or things are supplied to them; in other words, these faculties must receive Instruction. Training, therefore, embraces and defines all education, and, philosophically considered, it is the only true way of conducting it; Education and Training ought to be synonymous terms. On the other hand, Instruction refers only to a few of the faculties, and to a lesser function of these faculties, the supplying of them with food, which food can be properly supplied and assimilated only when administered according to the principles of Training.

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[1] Speech at Glasgow, in 1851, on National Education ; from *North British Daily Mail.*

[2] Lectures on Popular Education, p. 29.

[Hence George Combe prefers to give an absolute definition of education from the point of view of Training. But, in deference to common usage and from the separate importance of Instruction, and in order to discriminate between things too frequently confounded, to the detriment of education, he also defines the process from the points of view of both Training and Instruction, and carefully discriminates between the two, while showing their mutual important relations. See this subject more fully worked out in PART THIRD.—*Edit.*]

Education should train all the faculties.

The object of education is to attain to happiness. This can be attained only when all the faculties of body and mind are applied in their due spheres of action, and exercised in just proportion to each other.[1]

The object of education is to modify the innate powers, and to regulate their manifestations; to restrain such of them as may be too energetic; and to call forth into greater activity those which may be naturally languid.[2]

The object of education is to train, by means of exercises, the whole systems composing the human being to the best condition for exercising their functions. The reward of such an education is the pleasure of body and mind. A proper system of education must exercise each faculty of body and mind, to bring all into equilibrium.[3]

The object of education ought to be, to regulate the manifestations of all the faculties by the dictates of those peculiar to man; and, for this purpose, to subdue the activity of the propensities common to man with the lower animals, and exalt the activity of the faculties peculiar to man, or those which produce the moral sentiments and understanding.[4]

The Objects of Education are:—1st, To train the bodily and

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[1] From MSS.

[2] Essays on Phrenology, 1819, p. 308.

[3] From MSS.

[4] Essays on Phrenology, 1819, p. 308.

Education should train and direct all the faculties.

mental powers of man, so as to bring them into the best state of health and activity, and to maintain them in that condition. 2d. To direct them all to their proper objects. On the fulfilment of these conditions, usefulness and happiness chiefly depend.[1]

The objects of education, using the word in its widest and most legitimate sense, are :—

1st. To increase the energy and activity of those faculties of mind and body which are naturally too weak;

2nd. To repress the inordinate action of those which are naturally too strong; and

3rd. To give, to the combined operation of the whole, such a direction as shall most certainly and effectually increase the happiness and extend the sphere of usefulness of the individual.[2]

The objects of education are :—

1st. To quicken faculties too slow;
2nd. To strengthen faculties too feeble;
3rd. To repress faculties too active;
4th. To direct the whole to their proper objects.[3]

Is it not the object of every sensible parent, in educating his child, to develop his natural feelings and intellectual faculties into full vigour and activity, to direct them to their proper objects, and to restrain them when they act too vehemently, and to excite them when too sluggish?—in short, to bring forth a healthy, vigorous, harmonious action, which, by insuring the proper discharge of our duties to God and man, shall shed a daily beauty over life; and also, through compliance with the laws of Providence, shall lead to health, prosperity, holiness, and happiness? This is the just and rational aim of education.[4]

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[1] From the prospectus of a course of seven lectures on Education, delivered at Newcastle, in October 1835.

[2] *Phrenological Journal*, vol. i. for 1823–24, p. 578.

[3] From MSS.

[4] Speech on National Education in Aberdeen, 25th April 1851; from the *Aberdeen Herald*.

Education should train and direct all the faculties.

The objects of education are to cultivate the faculties of the higher sentiments, and the knowing and reflecting faculties into permanent energy and activity, and to repress the energy of the faculties common to man and animals, so as to place them under the guidance of the faculties proper to man. The morality of the individual will be in proportion to the predominance of the faculties of the higher sentiments over the lower propensities; and his genius will be in proportion to the energy of the knowing and reflecting faculties.[1]

The phrenologist, having discovered the talents and dispositions of his children, endeavours to curb the passions that are too powerful, to foster the principles that are too weak, to direct each faculty to its proper objects; and, above all, to inculcate practically the doctrine, that intelligence and virtue, love to God, shown in obedience to his laws, and charity to man, are the noblest attributes of humanity. This is phrenological education.[2]

3. DEFINITIONS OF EDUCATION, VIEWED AS TRAINING AND INSTRUCTION.

Education should train the faculties, and impart knowledge.

The process of education consists in training faculties, and communicating knowledge.[3]

An education based on a true philosophy of mind would fill the mind with knowledge, produce harmony in the action of the faculties, and furnish to each the gratification which it naturally desires, tending at once to usefulness and pleasure.[4]

Education should embrace instruction in the qualities, modes of action, relations, and purposes of the things and beings by means of which the government of the world is maintained; and also training

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[1] Essays on Phrenology, 1819, p. 331.

[2] Letter to Editor of *Edinburgh Weekly Journal*, 30th May, 1829, "On the prejudices of the great in Science and Philosophy against Phrenology;" issued as a pamphlet the same year, and printed in the *Phrenological Journal*, vol. vi. for 1829–30, p. 14.

[3] Moral Philosophy, Lect. vii.

[4] From MSS.

Education should train the faculties and give knowledge.

of the whole faculties, animal, moral, and intellectual, to action in conformity with the order of Providence.[1]

The object of education is to communicate knowledge to the intellectual powers, to give grateful exercise to the sentiments, and to regulate and direct the propensities.[2]

Education is intended to enlighten the intellect, to train it and the moral sentiments to vigour, and to repress the too great activity of the selfish feelings.[3]

The object of education is to communicate knowledge, by which the sphere of the mind's action may be enlarged; to train each individual to self-control and the love of good; and to enable him, by these means combined, to pursue successfully his own welfare.[4]

We must teach the child WHAT IT IS, WHERE IT IS, WHAT IT OUGHT TO DO, and HOW IT SHOULD DO IT,[5] in order best to fulfil the objects of its existence. That such instruction and a corresponding training are commanded by the Divine Ruler, appears to be indisputable, because He has so framed the organism of man and its relations, that well-being and moral advancement can be reached only by complying with the conditions which Physiology makes known.[6]

The objects of education are: to strengthen the faculties that are too weak, to restrain those which are too vigorous, to store the intellect with moral, religious, scientific, and general knowledge, and to direct all to their proper objects. In cultivating the intellect, we

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[1] What should Secular Education embrace? p. 31.

[2] From MSS. [3] Constitution of Man, 9th edit. p. 299.

[4] America, vol. iii. p. 254.

[5] This has been attempted by Mr William Ellis, in his work, entitled "What am I? Where am I? What ought I to do?" &c.; London: Smith, Elder, & Co. (G.C.)

[6] Science and Religion, 5th edit. p. 144.

The means of Education exist in nature and society.

should bear in view that external nature is as directly adapted to our different intellectual powers as light is to the eye; and that the whole economy of our constitution is arranged on the principle that we shall study the qualities and relations of external objects, apply them to our use, and also adapt our conduct to their operation.

The three great means of education are domestic training, public schools, and literature or books. The first will be improved by instructing parents; the second, by the diffusion of knowledge among the people at large; while the third is now—through the efforts of those philanthropists who have given birth to really cheap moral and scientific literature—placed within the reach of every class of the community.

Europe begins to appreciate education.

Europe is only waking out of the slumbers of the dark ages; she is beginning to discover that she is ignorant, and to desire instruction. The sun of knowledge, however, is still below the horizon to vast multitudes of our British population; but they are startled by a bright effulgence darting from a radiant sky, and they now know that that light is the dawn of a glorious day, which will tend to terminate their troubled dreams of ignorance and folly. Let us help to arouse them; let us lead them to pay their morning orisons in the great temple of universal truth. When they shall have entered into that temple, let us introduce them to Nature and to Nature's God; and let us hasten the hour when the whole human race shall join together to celebrate His power, wisdom, and goodness, in strains which will never cease till creation pass away; for we know that the sun of knowledge (unlike the orb of day), when once risen, will never set, but will continue to emit brighter and brighter rays, till time shall be no more. In eternity alone, can we conceive the wonders of creation to be completely unfolded, and the mind of man to be satiated with the fulness of information.[1]

Education is indispensable to national happiness.

I desire to see, in this country, a moral and intellectual machinery put into vigorous action, calculated to *teach* the young the legitimate spheres in which all their faculties should act, and to *train* them to impose that restraint upom themselves, to practise that self-denial and that self-direction which are indispensable to happiness and prosperity. I desire to see public opinion, which is here your great restraining power, composed, not of the sum of the ruling

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[1] Moral Philosophy, Lect. vii.

Education is indispensable to national happiness.

prejudices, passions, or interests of the day, but of the concentrated wisdom and virtue of millions of trained and enlightened minds. Such a public opinion I should regard as the best and safest of all governing powers. An ignorant public opinion is, to the wise and good, a revolting tyranny. In this country, you have chosen public opinion for your chief regulating influence, and it is impossible for you to substitute for it any other. You have established universal suffrage, placed supreme authority in the hands of your majorities, and no human means, short of military conquest, can deprive that majority of its sway. You have, therefore, only one mode of action left to reach the goal of national happiness: *enlighten* your people, *teach* them whatever is necessary for them, in order to guide their faculties aright,—*train* them to self control—*train* them, in youth, to bend all the inferior feelings under the yoke of morality, religion, and reason. In short, Educate them—and educate them well.[1]

[1] America, vol. iii. p. 404.

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[The foregoing definitions of education, gathered from various parts of George Combe's writings, are given as different and admirable expressions for the same process. They are interesting and valuable as showing in how many ways, that are more or less complete, the same truth may be presented.—*Edit.*]

PART SECOND.

WHAT SUBJECTS SHOULD BE TAUGHT IN OUR SCHOOLS?

THE ELEMENTS OF INSTRUCTION AND TRAINING.

PART SECOND.

CHAPTER I.

AN OUTLINE OF THE SUBJECTS THAT SHOULD BE TAUGHT.

1. THE PRINCIPLES THAT SHOULD REGULATE THE SELECTION OF SUBJECTS.

The distinction between means and end in education.

The question naturally presents itself—What constitutes a good education? The answer will be found by attending to the distinction between means and an end. If an architect be employed to build a house, he first prepares a plan, and then calls in the aid of practical workmen, to combine his materials into the proposed erection. The plan is merely a means toward the end. To be able to produce a plan, characterised at once by taste, elegance, and commodious arrangement, the architect must have studied mathematics and drawing. He might invent a design by means of his intellectual faculties, but without some knowledge of mathematics and drawing he could not reduce it into a practical form. The plan itself, however, is still only a methodised outline of the proposed object. Materials must be acquired and combined, in conformity with the design, before a house can be called into existence.

Subjects that are means to knowledge.

Now, drawing and mathematics are admirable attainments viewed as means towards accomplishing useful or pleasing ends; but if they produce nothing but *themselves*; or if they produce only plans, pleasing to the fancy, but not applicable to purposes of utility, they must be viewed as mere ingenious recreations or elegant accomplishments. What mathematics, drawing, and plans are to practical house-building, languages, writing, and arithmetic, are to practical business. They are means of acquiring and communicating knowledge. Moreover, knowledge itself, like the plan, is only a means of attaining useful and pleasing ends. Indeed, I might go farther, and say that drawing and mathematics delineate forms and deal with proportions; whereas language, apart from its applications, is a collection of mere unmeaning arbitrary sounds.

The effects of exclusive attention to these.

To limit the education of an individual who is destined to act the part of a husband, father, and member of society, to reading, writing, accounts, and the dead languages, would be similar to arresting the education of an architect at drawing, mathematics, and designing, without teaching him the kinds, strength, durability, cost, and modes of arrangement of the materials necessary for building. A person who could draw a plan of a handsome cottage, might be incapable of rearing a fabric corresponding to it, if he were defective in all the practical skill, knowledge, and experience, which are indispensable to convert the design into an actual house. For a similar reason, a man may be a distinguished scholar in Greek and Latin, without being thereby rendered a practical man of business, if he be not instructed in the knowledge of affairs. As, however, the architect must begin by learning to draw, so the practical member of society should commence his education by studying the means of acquiring practical knowledge; and I proceed to inquire what these means are.

The subjects that are Instrumental.

The English language, writing, and arithmetic, then, are important *means* of acquiring and communicating knowledge. They should be sedulously taught, and by the most approved methods. Algebra and pure mathematics also belong to the class of means. The former embraces only numbers and their relations; the latter, space and its proportions. The most profound knowledge of these subjects, however, is compatible with extensive ignorance concerning every object, topic, and relation, that does not essentially imply exact proportions of number and space. All languages, likewise, belong to the class of means. In preferring one to another, we should be guided by the principle of utility;—that language in which most knowledge is contained is most useful. For this reason, French, German, and Italian, appear to me to be more valuable acquirements than Greek and Latin.[1]

One great object of education is the attainment of knowledge itself. If the season for obtaining Real knowledge be dedicated to the study of languages, the individual will enter on active life in a state of qualification for practical business, similar to that of a man for the practice of architecture, who should have completed only his studies in drawing. He will be deficient in many acquirements that would be substantially useful for the preservation of health, and the successful conducting of affairs. He will know nothing about the structure of his own body, and very little about the causes which support it in health, or subject it to disease: he will be very imperfectly informed concerning the constitution of his own mind, and the relations established between himself and other beings: he will not be instructed in any science; know nothing of the principles of trade; be profoundly ignorant of the laws of his country, which he will be called on to obey or even to administer; in short, he will be sent into society with little other preparation than a stock of prejudices gathered from the nursery, and of vague imaginations about the greatness of Greece and Rome, the beauties of classical literature, and the vast superiority of learned pedantry over practical sense.

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[1] Knowledge is divisible into *Instrumental* and *Positive* knowledge. I. *Instrumental* Knowledge: Reading, all languages, writing, arithmetic, mathematics, algebra. These are only instrumental; they are the *keys* of knowledge. Society *polishes the key* but does not unlock the cabinet. II. *Positive* Knowledge: All other subjects that treat of natural objects and their relations.—*From MSS. of George Combe.*

The ignorance resulting from one-sided education.

To discover the evils that arise from this misdirection of education, we have only to advert to the numerous cases of individuals who sap their constitutions, and die in youth or middle age, not from the fury of ungovernable passions which knowledge could not subdue, but from sheer ignorance of the physical conditions necessary to health;—or to the ruined fortunes and broken hearts also referrible to the ignorance of individuals, of their own incapacity for the business in which they have embarked,—of the characters of those with whom they have connected themselves,—of the natural laws which govern production, or of the civil laws which regulate the transactions of men in particular states:—and to ask, how many of these calamities might have been avoided by instruction, and by proper discipline of the mind in the fields of observation and reflection?

Evils arising from one-sidedness.

To understand what constitutes useful and practical knowledge, you are requested to bear in mind the principles,—that every inanimate object and every living being have received a definite constitution from the Creator, in virtue of which each stands in one or other of two relations towards man:—either its natural qualities are such as he may bend to the purposes of his own enjoyment, or they are too gigantic to be subjected to his control, and he must accommodate his conduct to their sway.

What is useful and practical knowledge?

Water may be pointed to as an example of the first class: Man, as I formerly observed, may turn the roaring torrent from its course, ere it dashes over the mountain-cliff, and conduct it, as his humble

We ought to know the powers of nature.

slave, to his mill, where it may be made to grind his corn, weave his cloth, forge his iron, or spin his thread, according to the direction given to it by his skill; or he may inclose water in strong metallic boilers, convert it into steam, and employ its powers to propel his ship, in the face of the stormy winds and waves, to any wished-for haven; or he may, by the same means, almost fly along fields and meadows on the smooth lines of his artificial railway. But before he can command these high enjoyments, how minute and accurate must be his study of water and the changes which it may be made to undergo, and the latent powers which it may be forced to develop! How deeply skilled must he become in mechanical philosophy and its applications! And how complicated and admirable must be his combinations of nature's rude materials!

Wind affords an instance of the powers which man cannot control, but to which he may accommodate his conduct. He cannot guide the air as he does the stream; but he may give to his mill-house a revolving top, so that let the wind blow from what point it listeth, his sails shall spread their bosoms directly to the breeze. He cannot bid the air measure its motions to suit his objects, according as he wishes to saw the slender pine, or to crush into dust a mass of flint; but he may spread his canvas to the gale in proportion to the power required, so that the wind, if impetuous, shall press a contracted surface, and, if gently blowing, shall be caught by a broad expanded sail. Man has no power over the direction of the wind on the ocean; but by the skilful adaptation of the helm, masts, and sails, he may steer to his destined haven. How much of observation, how much of skilful combination, and how much of practical adaptation of the powers which man can wield, to those which defy his control, must be put forth before these glorious triumphs of his ingenuity can be accomplished!

What we ought to know for the conduct of life.

These illustrations are of general application. In common life we may never need to forge, to weave, to steer, or to spin; but we must all prosecute some vocation of usefulness and duty, otherwise we exist in vain. In whatever sphere of life we move, we are encompassed by the elements of nature, which minister to our health and enjoyment, or to our detriment and discomfort, according as we use them wisely or the reverse, according as we adapt our conduct to their real qualities or run counter to their influence. We are surrounded by human beings, and are influenced by the great tides of public affairs; and without knowledge of external nature, and of the nature of man, his history, laws, and institutions, we shall be no more capable of acting well and wisely our parts through life, than is the mariner of steering successfully without helm, compass, or chart, through the ocean.[1]

What constitutes a thorough education of the people?

What constitutes a thorough education of the people? It is of great importance to attain clear ideas on this subject. In an article in the *North British Review* on the Political Economy of the Bible,[2] Dr Chalmers laid it down as his opinion that sound religious instruction, the arts of reading and writing and arithmetic, combined with the knowledge of a trade, are the grand staples of education for the working classes. He said that God's providence, without their knowing how, would, out of these elements, bring forth individual happiness and national prosperity. And almost the whole education provided in times past, or even now contemplated, for the people is confined to these branches. But is this a complete view of the education needed by the people? Does it comprise all the instruction given by the higher and middle classes to their own children? Notoriously it does not.

The Real education of the workman.

This world is a grand assemblage of beings and materials, every one of which is endowed with active qualities, capable of producing important effects, and man's nature, bodily and mental, is adapted to them. In our climate, the earth produces spontaneously little beyond trees, shrubs, and grass. Wild animals may live on these, and man may hunt and live on them; but men living by the chase and clothed in the skins of wild beasts, are savages. Before we can reap wheat, oats, barley, beans, potatoes, turnips, and fruits from the ground, we must invent machines for ploughing, harrowing, thrashing, and winnowing, we must tame and train horses, and we must labour with them in the fields. But mere labour is not enough. We must learn to drain, to manure, to make proper rotations of crops; we must observe nature diligently and minutely; we must reflect on her modes of action, and, with patience and perseverance, adapt our conduct to her constitution: in other words, we must follow out the mode of cultivation which a sound judgment, enlightened by experience, discovers to be calculated to yield the largest return.

Now, how far does the common course of education go towards

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[1] Remarks on National Education, pp. 28–31.

[2] See *North British Review*, Vol. ii., for 1845. Dr Chalmers subsequently broadened his views of popular education, and recommended science for schools. See Appendix, for an expression of some of these.

The education he receives at present.

enabling the peasant's son to do this? It suffices to enable the ploughman to become the fellow labourer and the guide of his horse; but it leaves his mental faculties not only uninstructed in regard to all the other items of knowledge here alluded to, but indisposed to acquire them. It sends him forth with an empty mind, and a feeble brain; while the higher education of the superior classes confers on them more knowledge, and, what is of still greater importance to their future advancement, gives strength to their intellects and firm resolve to their moral emotions, which fit them for studying and complying with the natural conditions of well-being, in the sphere into which their destinies may afterwards lead them. It is impossible while the ploughman stands only a little higher in intelligence than his horse, and himself needs the combining and directing power of a more enlightened mind to guide him in his duties, that he can share equally in the profits of the farm with that superior individual. Similar remarks apply to all other trades and occupations.

The need of Real education to raise the people.

You who are engaged in manufactures requiring skill and knowledge, know well how much more valuable labour becomes, when combined with vigorous and enlightened intellect, and pure moral resolve. Now, will reform of Parliament and universal suffrage give you strength of intellect, skill, knowledge, and morality, without any education, training, or effort of your own? If not, how can it raise you in the scale of social enjoyment, if it leave you intellectually ignorant and morally weak? Impossible. The Great God of heaven and earth has pronounced the decree that the world is, by Him, given to the intelligent, the moral, the industrious, and the economical; and that toil, poverty, and privation are assigned to all who neglect to cultivate and apply the noble mental powers with which He has endowed them. And who shall reverse or evade the fiat of Omnipotence? Look at France: her people lately enjoyed universal suffrage; but they were ignorant; and the legislature which they chose could not reverse the decrees of God, and render ignorant and untrained men in a day, or a year, prosperous and wealthy. By all means, let us extend the suffrage and improve our laws, and let justice be done to all. But let no man deceive you, that it is possible by Acts of Parliament to banish poverty, privation, disease, and early death, while the causes of them remain; and the causes of these evils lie, not entirely, but to a great extent, in the state of our own minds and bodies. The political economist who counsels you to practice industry and economy, advises well; but all enlightened men of this class are the grand advocates also of a

thorough education, to enable you to profit by
you have acquired them.

You will understand that, by Secular instructio
much beyond reading, writing, arithmetic, and t
ing, writing, and arithmetic are merely the mean
ledge; and one of the great causes why the scho
given to the people has been so unproductive of i
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and words disjoined from things, are mere empty
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son, bears to the living man, John Thomson him
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make a good master, a good servant, a good hus
or a useful citizen, if he had merely heard or r
name, and been taught how to pronounce them.
Thomson, converse with him, inquire about his
training, age, and health, before we can judge w
a teacher should order his scholars to learn the G
heart, do you think that after they had done s
all the citizens personally, and by head-mark?
would be miserably tired of their unprofitable
the names in a few months after leaving school,
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resemblance to this style of instruction, and the
they forget it, and find little or no pleasure in
By Secular instruction, I mean introducing yo
himself, and making you thoroughly acquainted
habits, and attainments. This world is not only
in which God has inscribed the records of His wi
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names which we give to these divine gifts.

Secular instruction, then, means presenting, to
which God has made, the objects, the real thing
he has adapted to them. The science of Che
unfolds the minute structure of bodies, the mod
elements, and the laws which regulate their for
farmer to understand better the composition and
of his manure, of moisture, and the peculiar elem
of grain chiefly abstracts from the ground. A

The study of things and science.

taught this knowledge at school will be enabled to raise better and larger crops from the same soil and materials, by wise combinations, than if he acted by mere rule of thumb. Chemistry instructs the blacksmith in the qualities of iron, the carpenter in the nature of the wood, the dyer in the composition and laws of colours, the baker in the nature of flour and yeast; and it may help to convert every one of the operatives in these trades, from a mere routine machine, into a clear-headed administrator of portions of God's creation for beneficial ends. Time forbids my detailing the kinds of knowledge which Natural History, Natural Philosophy, and Anatomy, and Physiology communicate; suffice it to say that every one of them unfolds a great branch of natural objects and forces, obviously destined for the use of man, and actually soliciting the application of his intelligence, to enable him to convert them into means of increasing his enjoyments.

The training of the faculties.

This instruction is not intended to supersede moral and religious training, but to supplement it and render it effective. Indeed, it is not so much the mere knowledge of the details of Chemistry, of Natural Philosophy, or of any other science that I value, as the strengthening of the intellect, and the enlargement of the understanding, which follow from these studies, and which enable the educated man to carry out his moral, intellectual, and religious convictions into action. In this latter power, the working classes are greatly deficient; and a course of instruction limited to reading, writing, arithmetic, and the catechism is calculated to keep them in that condition, to the end of time. It omits all just and comprehensive views of the forces and laws of God's external creation, through the instrumentality of which His providence in this world is conducted.

Ignorance prevents the cure of evils.

One baneful consequence of the omission of natural science from education is, that the working man, in his sufferings, is unable to discriminate to what extent these arise from breach of the laws of God, and to what extent from the laws of man. In bad health, he cannot discern how much of his affliction arises from his own unwitting infringement of physiological laws, instituted by the Creator for his welfare, and how much from the faults of his employer, in not attending to these laws in the construction and arrangement of his workshop. In his poverty, he does not inquire, how far his hard lot is owing to his parents having neglected his education and left him mentally ignorant and feeble, and how far to unjust and oppressive taxation. In short, this defective education, by leaving him uninstructed in the things and the forces which cause his well-being or his suffering, leaves him indisposed to turn his attention to the causes of his evils (be they in himself, in government, or in social institutions), and incapable of desiring and steadily pursuing the natural, and, therefore, the effectual means of escaping from them.

The effects of true education on the working classes.

Conceive, for a moment, what a change would be operated on the moral and intellectual condition of the working classes if, for a few generations, they received such an education as this! They would become superior in intelligence and in mental resources of all kinds, to the best educated classes of our present communities. And do you believe, that working men thus instructed and trained would continue in the state of poverty, privation, toil, and suffering which now unhappily characterises so many of them? No; they would, by a moral necessity, rise in the social scale, and would reap a larger share of the bounties of God's Providence, because they would then possess the qualities by which, according to the laws of that Providence, those bounties may be acquired.[1]

The knowledge society should insist on its members acquiring.

What kind and *degree* of knowledge has society a right to insist on its members acquiring? The individual has a right to the most perfect freedom of thought and action in regard to every thing which does not directly or indirectly affect the welfare of other men. To come at once to the grand point of controversy on the subject of national education—society has a right to insist that he shall be instructed and trained in whatever is necessary to fit him for the discharge of his duties, as a member of the community in which he lives; but, in all beyond this, the individual has a right to unbounded liberty of self-determination as to what he shall learn and what he shall not learn. He has no right to continue filthy in his habits; because this may induce disease and infect his neighbours. He has no right to continue grossly ignorant; because in this state of mind he is unfit to regulate his passions, to act with a rational regard to his own and the public welfare in the circumstances in which he is placed, and also to apply his natural powers in that kind of labour by which alone he can subsist in a society composed of intelligent and skilful men, on whom he has no right to throw the burden of his incapacity. But he has a perfect title to decline to study poetry, or rhetoric, or painting, or sculpture, if these be distasteful to him; because his remaining ignorant of these accomplishments can carry no direct harm to his fellow-citizens. In the former category—that of things which he is bound to learn, because his ignorance of them is injurious to society—I place a knowledge of moral duties; and, in the latter, I rank those religious doctrines the foundations of which rest *exclusively* on supernatural communications.

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[1] Speech at meeting in Glasgow, in 1851, on National Education, from *North British Daily Mail.*

What Religious education should be given.

I recognise explicitly the importance of *religion* to the welfare of society and to that of the individual. Active religious feelings dispose a man to venerate and submit himself to those moral and physical laws instituted by the Creator, on which his own happiness and that of society depend. They prompt him also to adoration and gratitude, emotions highly influential in the right ordering of human conduct. But under the head of what is generally called religion, are included doctrines and precepts which God has already forced on our acceptance by the clear order of nature in this world, and other doctrines of which the human understanding, unenlightened by revelation, is incapable of gaining a competent knowledge. In regard to the former, nature and Scripture coincide, and speak one and the same language; whereas nature is silent, or so obscure as not to be practical, in regard to the latter. It appears to me, that Government, as a secular institution, has a right to insist that its subjects shall be instructed in every species of knowledge, and trained to every mode of action, which directly affect the welfare of society, and which are prescribed as a duty, equally by Scripture and by the natural laws of the body, of the mind, and of the external creation.

The universal laws of morality ought to be taught.

The laws of health, industry, and morality, are thus enacted by the Creator, and are universally prevalent. In Christian Europe, in Mahomedan Asia, and in Pagan Africa, the individual who neglects cleanliness, who lives in bad air, and indulges in vicious habits, ruins his health, whereby he may become a focus of infection, and incapacitate himself for the discharge of his social duties; he who is ignorant and reckless of the moral law becomes a scourge and affliction to his fellow-men; and he whose intelligence is so limited that he is incapable of acting successfully a part in the social evolutions amidst which he lives, is in constant danger of becoming a burden on their industry, and of throwing on them the evil consequences which God has attached to his ignorance and incapacity.[1]

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[1] Remarks on National Education, p. 10.

Education should feed all faculties.

We should study with the view of applying the knowledge so acquired to the advantage of ourselves and our fellow-men. In short, whatever knowledge we acquire must not be allowed to terminate, as it has hitherto done, as mere barren intellectual conceptions, freezing in the brain, and fostering only self-esteem, without vivifying the moral sentiments or subduing the propensities. It must be connected with life, and be rendered the food of all the faculties; and then education will produce its full effects. The change which this kind of education would produce would probably be great.

The defects of education: In producing mental unrest;

At present, uneducated men and women are tolerably happy while gaiety of youth, the excitements of fashionable society, the business of trade, or the duties of a family, give some employment to their mental powers. But even in this most favourable condition, they are, in a great degree, strangers to the pure and refined enjoyment which attends the exercise of intellect and sentiment. Amidst all the bustle of life, there is felt to be a want, and on the cessation of excitement, the mind does not look back with satisfaction to its past labours as altogether pleasing and satisfactory. Now, this dissatisfied feeling is the craving of the sentiments for enjoyment; it is the result of the avocations in which we have been engaged having afforded no pleasure to them; and while the course of life continues the same, the same vanity and vexation of spirit must necessarily be felt.

As seen in conversation.

Look, again, at the conversation which usually takes place at our social parties, in the present state of education. It not unfrequently happens that, in a whole evening, neither a conception nor a sentiment has been uttered that we can recal on subsequent reflection, or that affords us a moment's future pleasure. Secretiveness has kept under not only improper manifestations, but every generous feeling and interesting idea, for fear of the individual being remarked as particular, pedantic, conceited, affected, or some other fear; and the only faculties manifested have been Love of Approbation, in unmeaning civilities, and the Knowing faculties, in trifling stories and chit-chat. All this arises from the absence of knowledge of the human faculties.

The effects of true course of education.

But suppose the course of education now recommended to be followed. In the first place, the knowledge of the physical world affords food for the intellect and strengthens its powers; an acquaintance with the philosophy of mind makes us know not only ourselves but each other. It withdraws the veil which at present operates like a barrier of ice between man and man; it brings into our view all the admirable faculties which nature has bestowed, and teaches us their uses and how to shun their misapplication. It gives the reins to Adhesiveness, Benevolence, Veneration, Ideality, and Intellect, and sets Justice high over all; while it restrains the lower powers. But this is not all. When the intellect and moral sentiments are supplied with proper objects on which to exert their powers, the pleasures of sense, and the gratifications of vanity and paltry ambition, sink into natural insignificance; they cease to be vehemently desired, and then precepts against them become availing. We have provided other enjoyments, and it is not painful to leave these off.

Education has improved our national life.

Five hundred years ago, when our rude forefathers hunted and fought and plundered each other's possessions, for their serious employment, and dosed in listless idleness and ate and drank, for their pastimes,—in short, when they manifested the lowest of the propensities and felt no pleasure in the exercise of sentiment and intellect,—they disregarded all precepts recommending morality and enforcing religion, and they would have treated with scorn the prophecy, that a day would come when no combat would be fought within the whole confines of Britain, and when cattle might pasture on the hill and corn grow in the fields, with no protectors but the law and the sentiment of justice, in the great body of the people, which gives law its function and authority. But we have lived to see these manners obsolete; and how has the change been produced? The art of printing has provided food and employment for higher faculties, and the pleasures of these are preferred to the enjoyments of the lower feelings. But still we are only half-way advanced in the scale; we have got past Combativeness and Destructiveness, and robbery and murder, but we are still only in the sphere of Acquisitiveness and Self-Esteem and Love of Approbation. Power, wealth, consequence, are now the leading motives.

What still remains to be done in regard to it.

Let, however, the course of education which I have recommended be followed, and these will sink into secondary objects, and higher delights be pursued. You will observe, that I do not here indulge in utopian dreams of a change in the constitution of the human mind, or of external nature. These, in this system, all remain the same; but the mental powers are directed to their legitimate objects, and brought into harmony with external nature. Accordingly, I do not anticipate the day when wealth will be neglected and power despised. On the cont[illegible]s our countrymen are now as brave, when just occasion c[illegible] the field, as the turbulent sons of the mountain and g[illegible]ght in the feuds of our ancestors, so our enlightened s[illegible] be as industrious and as attentive to secure their just personal rights as we; but they will view these and employ these as means only of attaining to higher pleasures, instead of stopping short, as we now do, with the barren possession.

Social intercourse as it is.

This leads me to observe, that the highest human enjoyment is in social intercourse. Our faculties are made with a reference to society, and the presence of our fellow-men is necessary to their full enjoyment. But, while the mind is uninstructed and the sentiments undirected, this intercourse is necessarily limited, and the pleasures which it affords meagre. No common principles of thinking are possessed, by which knowledge may be tried and opinions brought to a test; no medium is known for reconciling opposing sentiments, and few precise ideas or much useful information is brought to bear upon our present social enjoyment.

How true education would raise it.

If, on the other hand, such instruction as I have recommended were generally diffused, individuals would meet with common principles, with minds teeming with ideas, and sentiments glowing with emotion. Every individual would be a cultivator of music, of painting, of poetry, of literature, of science, or of some useful branch of information; all would possess common objects, in the improvement and expansion of the intellectual faculties, and the gratification of the moral feelings; they would possess common principles, in the philosophy of external nature and of the human mind; they would, to a great extent, possess a common language, for, where the ends coincide, the names of the different means are speedily communicated: in short, each could bring his share of entertainment and instruction to the common banquet. Social meetings would then be sought, as the great means at once of enjoyment and of improvement; they would invigorate the mind, while they relieved it, by repose from the toils of ordinary labour. Hours of leisure would not be hours of hurtful dissipation or listless idleness, but intelligence, virtue, and religion would march hand in hand; and after a day was spent, it would be found to have furnished some gratification for all the faculties, and the inanity and malignity which now disturb society would necessarily disappear.

The general results of a true education.

In short, an education based on a true philosophy of mind would fill the mind with knowledge, produce harmony in the action of the faculties, and furnish to each the gratification which it naturally desires, leading at once to usefulness and pleasure.[1]

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[1] From MSS.

2. A GENERAL VIEW OF THE SUBJECTS NECESSARY FOR REAL EDUCATION.

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Our schools, generally speaking, have been founded by men of letters, and teach words. We must reform our schools, and enable them to teach practical knowledge; and we must send all our children to school, to be instructed and trained. It is clear, that the ignorant and destitute cannot pay teachers to give this kind of education to their children. Generation after generation, they come forward as paupers and criminals, to lie as burdens on the industrious; and unless those who are superior to themselves make an adequate moral effort to instruct and train them, the evil will never diminish.

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I propose, therefore, to erect schools to teach the children of all classes who choose to attend them, free of expense, the structure and functions of their own bodies, the structure and laws of physical nature, and the relation of man to these objects and laws; the facts of social economy; and, above all, the laws of morality and religion, and the indispensable necessity of our observing them, in order to attain prosperity; and we must train our children to act on this knowledge. These measures will not banish all vice and want, for in many individuals these spring from organic defects, but they will diminish them; and this must precede all other plans and appliances for human improvement, unless we can work miracles.[1]

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As a general proposition, it may be truly asserted that God gives to each individual born into this world only a body, a mind, and a field in which to apply them. All besides must be acquired by our own skill and industry. If some individuals are born to the inheritance of riches, they form no exception to the foregoing proposition, because some ancestors or predecessors of these favoured men must, by skill and labour, have acquired the wealth which thus descends to them. The body is an assemblage of organs, producing physical force; the mind is a collection of faculties, conferring on us animal, moral, and intellectual power; while the world is a vast arena, admirably adapted for the application of these endowments. Under such an arrangement, the share of the world's enjoyments offered by the Creator to each individual, will obviously bear reference to the skill and assiduity with which he applies his physical strength and mental intelligence to the task set before him.

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[1] From speech to Working Classes, delivered at Paisley Sept. 29, 1851; from *North British Daily Mail.*

Present education does not fulfil these.

From our existing schemes of education having been devised by men learned in the Greek and Latin languages, in an age when extremely little of physical and animated nature was known, words,—languages, and grammar then constituted the staples of instruction,—and continue so to the present day, although the state of things has greatly changed. Look at our seminaries and parish schools all over the kingdom, and inquire what, as a general rule, is taught? Reading, writing, arithmetic, geography, and, in some, a little algebra and mathematics, and the catechism. But in not one of these branches of knowledge is there one iota of causation; and yet on our knowledge and judicious application of causes, depends our well-being or misery in this life.

The education necessary to fulfil them.

The grand reform, therefore, now needed in education is, to teach—

Firstly: Things that exist.

Secondly: Their modes of action.

Thirdly: The nature of man.

Fourthly: How the operations of the elements of nature are adapted to the human mind and body, and *how* they give rise to most of the pleasures and pains of life.

Lastly: In every step of this instruction, we should direct the emotional faculties of Wonder, Reverence, Benevolence, Conscientiousness, and the Love of the Beautiful, to God, as the author of all; and train these faculties practically to the faith that, in conforming to His laws, we are paying Him the highest homage that can be offered by a rational being to its Creator, and at the same time, expanding, elevating, and improving our own minds.

The void in the education of the people.

This view of education has been repeated so frequently that I should apologize for re-stating it here; but I ask, Where is it to be found practically applied? Go into the schools for the working-classes all over Scotland, and ask what is taught. Only bear in mind, while you are receiving the answer, that an external world exists; that it is an assemblage of constantly active beings, animate and inanimate; and that God made and adapted it to man: and then judge how much of this knowledge is taught to the young. If you will only do this, your own minds will open to the perception of a gigantic void in the elementary instruction of the people.[1]

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[1] From Lecture "On the Comparative Influence of the Natural Sciences and the Shorter Catechism on the Civilization of Scotland," delivered 25th Nov. 1851, in Edinburgh.

The teaching of subjects of *Causation* is neglected in our schools;

[1] In my lecture, I said: "Look at our seminaries and parish schools all over the kingdom, and inquire What, as a general rule, is taught? Reading, writing, arithmetic, geography, and in some places a little algebra and mathematics, and the catechism. But in not one of these is there one iota of causation; and yet in our knowledge and judicious application of causes depends our well-being or misery in this life." Your Grace is reported to have remarked on this passage: "He says there is not a particle of 'causation' in the school instruction. Now, those who live in glass houses, it is an old proverb, ought not to throw stones; and those who charge us with *a want of reasoning* ought to be very sure that their own is extremely correct." Allow me to observe that here Your Grace obviously considers "*causation*" and "reasoning" to be one and the same thing; for I never said that no "reasoning" is taught in the schools, although I certainly affirmed that there was no "causation." I beg permission to refer Your Grace to "Johnson's Dictionary," for the meaning of these two words. The definition of "causation" is "the act or power of causing;" that of "reasoning" is "argument." If Your Grace will keep this distinction in view, you will find that though there is abundance of "argument" or "reasoning" in reading, writing, arithmetic, geography, algebra, mathematics, and the catechism (the subjects taught in our common schools), there is literally no "causation;" that is to say, in none of these do we find expounded any active physical or physiological force operating, independently of the human will, and which will benefit us if wisely applied, and injure us if ignored or unskilfully handled.

But necessary for happiness.

The proposition in my lecture was, that the whole of external nature is an assemblage of objects exercising such forces; that they were instituted by God, and bear definite relations to the human mind and body; and that without studying, or acting in accordance with, their modes of action, we cannot take our stations in this world as its rational administrators, avoid evil, and command the enjoyment placed by Providence within the reach of our understandings, when enlightened in regard to His ways and trained to obey His will.

The aims of true education and the requisite subjects:

One great use of knowledge is the preservation of health. This, although too much overlooked in many of the established systems of

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[1] From letter, in the *Scotsman* of 21st January 1852, to the Duke of Argyle, who made a strong speech regarding George Combe's views contained in the lecture of which the foregoing is an extract, at a meeting of the Church of Scotland's Endowment Scheme, the same month.

(1.) The preservation of health;

By teaching Anatomy and Physiology.

education, is of paramount importance. Life depends on it, and also the power of exercising with effect all the mental functions. There are two modes of instructing an individual in the preservation of health: the one by informing him, as a matter of fact, concerning the conditions on which it depends, and admonishing him, by way of precept, to observe them; the other, by expounding to his intellect the constitution of his bodily frame, and teaching him the uses of its various parts, the abuses of them, the relations established between them and external objects, such as food, air, water, heat, and cold, and the consequences of observance or neglect of these relations. The former method addresses the memory chiefly; the latter, the judgment. The former comes home to the mind, enforced only by the authority of the teacher; the latter is felt to be an exposition of the system of nature, and deeply interests at once the intellect and affections. The former affords rules for particular cases; the latter, general principles, which the mind can apply in all emergencies. The instruction here recommended implies an exposition of the principles of Anatomy and Physiology.

(2.) The exercise of the mental faculties;

Another use of knowledge is to enable us to exercise the mental faculties themselves, so as to render them vivacious and vigorous, and thereby to promote our usefulness and enjoyment.

The wonderful effect of a change from inactivity to bustle and employment, is well known in ordinary life, and is explicable only on the principle of strengthening the organs by a due amount of exercise. In nine cases out of ten, a visit to a watering-place, or a journey through an interesting country, restores health more by giving excitement to the mind than by means of the water swallowed, or the locomotion endured. And it is well known that, under strong excitement, weak and delicate persons will not only exert double muscular force, but even prove superior to the effects of miasma and contagion, to which, when unexcited, they would have been the first victims. In the army also, it is proverbial, that the time of fatigue and danger is not the time of disease. It is in the inactive and listless months of a campaign, that crowds of patients pass to the hospitals. In the former cases, it is active exercise, giving strength to the mind, and, through it, healthy vigour to the body, which produces the effect.

By teaching natural science.

Now, instruction in natural science connects our sympathies with real existences and living beings, furnishes our understandings with positive and precise ideas, and brings home to our minds an irresistible conviction of our being placed in the midst of agents, physical, animal, moral, and intellectual, to whose qualities we must adapt our conduct, if we desire to enjoy life. It furnishes us with the means, not only of planning useful occupations, but of executing our designs; and in such courses of action, there is the highest enjoyment.

(3.) The performance of all our duties.

A third use of knowledge is to qualify us to perform our duties, physical, moral and religious, in the best manner, and to reap the fullest enjoyment which Providence allots to those who best fulfil the objects of their existence, and yield the most perfect obedience to the Divine laws. A knowledge of the qualities, relations, and modes of action of inorganic objects and organic beings, is a knowledge of the order of God's secular Providence in the government of the world; and if this conclusion be sound, it follows that it is only by diligent study of the order of nature that we shall learn how to accommodate our conduct to the Divine laws, which regulate prosperity and adversity, health and disease, life and death, in the present state of existence.[1]

Many faculties still remain untrained in the nation.

The institutions and manners of society indicate the state of mind of the influential classes at the time when they prevail. The trial and burning of old women as witches point out clearly the predominance of Destructiveness and Wonder over Intellect and Benevolence, in those who were guilty of such cruel absurdities. The practices of wager of battle, and ordeal by fire and water, indicate great activity of Combativeness, Destructiveness, and Veneration in those who permitted them, combined with lamentable ignorance of the natural constitution of the world. In like manner, the enormous sums willingly expended in war, and the small sums grudgingly paid for public improvements,—the intense energy displayed in the pursuit of wealth, and the general apathy evinced in the search after knowledge and virtue,—unequivocally proclaim activity of Combativeness, Destructiveness, Acquisitiveness, Self-Esteem, and Love of Approbation, with comparatively moderate vivacity of Benevolence and Conscientiousness, in the present generation.

The education required to train them.

Before, therefore, the practices of mankind can be altered, the state of their minds must be changed. It is an error to impose on a people institutions greatly in advance of their mental condition. The rational method is, first to instruct the intellect, then to interest the sentiments, and, last of all, to form arrangements in harmony with these faculties, and resting on them as their basis. These principles,[1] if founded in nature, may be expected to lead to considerable changes in many of the customs and pursuits of society; but, to accomplish this effect, they must first be ascertained to be true; next they must be sedulously taught; and only thereafter can they be practically applied. It appears to me that a long series of years will probably elapse before even nations now regarded as civilised will model their institutions and manners in harmony with the natural laws.

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[1] Lectures on Popular Education, p. 44.

The first step is to teach the Natural Laws.

The first step should be to teach these laws to the young. Their minds, not being occupied by prejudice, will recognise them as congenial to their constitution; the first generation that shall embrace them from infancy will proceed to modify the institutions of society into accordance with their dictates; and in the course of ages, they may at length be found to be practically useful. A perception of the importance of the natural laws will lead to their observance, and this will be attended by an increase of physical prosperity, a higher morality, and, in process of time, an improved development of brain, increasing the desire and capacity for further progress. All true theories have ultimately been adopted, and influenced practice; and I see no reason to fear that the present, if true, will prove an exception. The failure of all previous systems is the natural consequence of their having been unfounded; if this resemble them, it deserves, and assuredly will meet, a similar fate.

This the basis of useful knowledge and true education.

The present work[2] may be regarded as, in one sense, an introduction to an essay on education. If the views unfolded in it are in general sound, it will follow that education has scarcely yet commenced. If the Creator has bestowed on the body, on the mind, and on external nature, determinate constitutions, and has arranged them to act on each other, and to produce happiness or misery to Man according to certain definite principles; and if this action goes on invariably, inflexibly, and irresistibly, whether men attend to it or not: it is obvious that the very basis of useful knowledge must consist in an acquaintance with these natural arrangements; and that education will be valuable in the exact degree in which it communicates such information, and trains the faculties to act upon it. Reading, writing, and arithmetic, which make up the instruction generally enjoyed by the lower orders, are merely *means of acquiring*

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[1] Developed in "The Constitution of Man."

[2] "The Constitution of Man."

knowledge, but do not *constitute* it. Greek, Latin, and mathematics, which are added in the education of the middle and upper classes, are still only *means* of obtaining information. Hence, with the exception of the few who pursue physical science, society dedicates very little attention to the study of the natural laws. And even those who do study science, disconnect it from the moral and religious sentiments, and thus allow more than half of its beneficial influence on human conduct to be lost.[1]

This the best means of human improvement.

In attempting to give effect to the views now discussed, I respectfully recommend that each individual, according as he becomes acquainted with the natural laws, should obey them, and communicate his experience of their operations to others; avoiding, at the same time, the subversion, by violence, of established institutions, and all outrages on public sentiment by intemperate discussions. The doctrines here unfolded, if true, authorise us to predict that the most successful method of ameliorating the condition of mankind will be that which appeals most directly to their moral sentiments and intellect; and I may add, from experience and observation, that, in proportion as any one becomes acquainted with the real constitution of the human mind, will his conviction of the efficacy of this method increase.[2]

The elements of general education.

Knowledge of man himself, his mental endowments, his history, and his institutions, belongs to the class of useful information. A useful education should embrace instruction in mental philosophy, geography, civil history, political economy, and religion.

The fine arts;

A genius or taste for poetry, music, painting, sculpture, or languages, is bestowed by nature on particular individuals, and these branches of knowledge should be taught to those who have an aptitude for them. They are of much value as means of elevating and refining human nature; but, unless there be in the mind a decided talent for them, they should not be made the great objects of education, or the business of life.

And classics;

I request you particularly to observe that I do not denounce the ancient languages and classical literature on their own account, or desire to see them cast into utter oblivion. I admit them to be refined studies, and think that there are individuals who, having a natural turn for them, learn them easily, and enjoy them much. They ought,

[1] See this latter thought more fully worked out in Part Second, Chap. v.

[2] "Constitution of Man," 9th edition, pp. 306–8.

therefore, to be cultivated by all such persons. My objection is solely to the practice of rendering them the main substance of the education bestowed on young men who have no taste or talent for them, and whose pursuits in life will not render a knowledge of them a valuable acquisition. The fine arts, also, should be taught as enjoyments, and a relish for them encouraged; but, in common minds, a considerable amount of moral and intellectual cultivation must *precede* their due appreciation. Farther, as long as the present institutions of society exist, some knowledge of Greek and Latin is indispensable to young men who mean to pursue medicine or law as a profession. Of course, Greek must be studied by divines.[1]

Their true place in education.

It appears to me, that the elementary principles of all the natural sciences, when contemplated in their primitive forms by superior minds, are simple, and that they constitute the native food of the intellect. I include in these sciences the knowledge of man's physical, moral, and intellectual nature, and the relations subsisting between them and external objects and beings. One advantage of communicating instruction in these truths to youth is, that it furnishes them with a solid basis on which to found their judgments. Under the old system, there was much of conflicting opinion; authority stood against authority, and in the phases of human life, chiefly intricacy and inscrutable evolutions were presented. The causes of good and evil did not appear, and the consequences of actions were scarcely traceable. A people invested with political power, whose education leaves them in such a condition, must, to a great extent, be exposed to the seduction of their passions, to be misled by imperfect views of their own interests, and even to the delusions of an excited imagination, leading them into wild speculations and impracticable adventures. An education in natural truth has the tendency to steady the whole mind, and to place passion, imagination, and ambition, under the guidance of reason.[2]

The mental influence of an education in natural truth.

Addressing the Americans, George Combe says: In your country, above all others, your school education should teach your youth the specific knowledge of the constitution and powers of physical nature, and the means by which they may be applied to the promotion of human happiness; of the constitution of the body, and the laws of

The natural truths that should be taught.

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[1] Lectures on Popular Education, p. 40.

[2] Notes on America, vol. iii. p. 99.

The natural truths that should be taught.

health; of the constitution of the mind, and the means by which we may be best trained to the discharge of our duties in the private, domestic, and social circles; of the laws by which wealth is created and distributed; and of the influence of morals and legislation on the welfare of the individual and society. As you do not wait until your voters, who wield the destinies of your country—who make peace and war—who make and unmake banks—who make and unmake tariffs, affecting industry to the core—and who make and unmake even your schools, colleges, and churches,—I say, as you do not wait until age has given them wisdom and experience, but place the helm, at once, in their hands, and allow them to act, while they are still full of young blood and all the energy, confidence, and rashness that attend it,—you are called on, by every consideration, to perfect your schools, so as to communicate to them the dictates of a wisdom which cannot be dispensed with, and which will not otherwise be attained.[1]

The practical aims of true education and the instruction necessary.

What, then, is the object of secular instruction?

To render the husbandman more skilful, by instructing him in the nature of soils, the relations to these of particular manures, and the best modes of working his land; to render the mechanic more expert in conducting his trade, by instructing him how the elements of nature, on which he operates, act and react, so as to enable him to avoid processes to which nature is opposed, and to follow those in which she will assist his efforts; to render the mother more capable of rearing her child, by instructing her in its constitution, and the effects of air, light, food, heat, cold, and other external influences on its health; to enable every man, by an instructed intellect, and cultivated moral and religious feelings, to become a more kind, intelligent, prudent, exemplary husband, parent, friend, and neighbour.[2]

3. THE SPECIAL BRANCHES THAT SHOULD BE TAUGHT.

How, then, are the great mass of mankind to be educated, and in what studies? Let us look to the faculties they possess, and keep in view that our object is, to communicate knowledge to their intellectual powers, grateful exercise to their sentiments, and to regulate and direct the propensities.

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[1] Notes on America, vol. iii. pp. 408–9.

[2] Speech on National Education, 25th April 1851, at Aberdeen, from the *Aberdeen Herald*.

The INSTRUCTION required:

In ordinary minds, the Knowing and Reflecting organs[1] are fairly developed, and the organs of Benevolence, Veneration, Hope, and Justice also are, in general, amply bestowed. The organs most frequently found deficient are the ornamental powers, Ideality, Wit, Imitation, Tune, and Constructiveness.

Accomplishments

Now, music and drawing, which form such laborious departments of female education, are addressed almost exclusively to Time, Tune, Constructiveness, Ideality, and Imitation. Setting the highest value upon these accomplishments which they merit, and I do not at all under-estimate them, I observe that there are still higher objects to be attained by education, viz., to communicate ideas or knowledge that may be practically useful. To this end, the knowledge of language, written and spoken, must be possessed, as the vehicle of communication; and this is the sole end of learning languages.

Languages

The nature and laws of material objects;

In the next place, we must study, as I have said, natural objects and their relations. The advantages of doing so will be best understood by an example. In order to enjoy life, it is necessary to have sound health, and an active, well-regulated mind. To enjoy health, which is the fundamental requisite of happiness, we must observe the conditions which the Creator has appointed as necessary to this result. The human body, for example, is itself a combination of matter, and a most intricate machine: it requires food, air, exercise, for its healthy action; and it is liable to be injured by external influences, not only in the shape of violence, but by changes in the atmosphere, by particles of matter so minute as not readily to catch the eye, and by neglect of exercise and diet. According to the present mode of education, treatises are written and precepts delivered desiring the physical conditions to be observed, and pointing out, in glowing colours, the evils of neglecting and the benefits of observing them. But these precepts do not communicate to the understanding *how* the result takes place; they are addressed, in short, blindly to Cautiousness, Hope, or Veneration, or some sentiment, but not to *both* the understanding and the sentiments; and, before knowledge becomes practical, it must excite *both*. To reach the understanding, therefore, we must communicate elementary knowledge to the Knowing faculties, and draw conclusions to satisfy the Reflecting powers. Hence, we should teach the general nature and laws of the material objects which exist around us, and

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[1] The unphrenological reader might consult, with advantage, the list of phrenological organs and their functions, given in the Appendix, to fully understand and appreciate this passage.

Man's physical constitution, and relations;

of their mode of action. This comprehends Natural History, Chemistry, and Natural Philosophy.

Next, we should communicate a knowledge of the structure of the human body, and of the uses and modes of action of its different organs which conduce to health. Lastly, the relation between the physical objects of external nature and the human frame should be explained, and the way in which the one affects the other pointed out.[1]

To attain these ends, it would not be necessary to teach these sciences in all the details in which they are communicated to professional students. The elementary principles of them, elucidated by apposite examples, and directed always to practical application, would suffice.

His moral and intellectual constitution;

I have supposed the young instructed in the physical constitution of external nature and of the human frame, and in their mutual relations. The next object is, to instruct them in the constitution of the moral and intellectual world; and this also is of vast importance. A certain portion of our enjoyment comes from the influence of external physical objects. But think, for a moment, how much is derived from the influence of the moral and intellectual beings around us, and how much happiness or misery we may cause to others. This happiness depends on agreeable affections of the various mental faculties, and on their regulation and exercise. The Philosophy of Mind, as the means by which we are to know others and ourselves, and to direct our faculties to proper objects, ought to be the next branch of juvenile education.

The Principles of Morals and Æsthetics;

The applications of Phrenology, as the Philosophy of Mind, branch out into the foundations of Natural Religion; into the Theory of Morals; into the Duties of Life, so as to obtain the highest gratification of the faculties and to avoid abuses of them; into the principles of Taste and Criticism; and into the philosophy of the Fine Arts. In short, it contains the elementary principles on which all sciences connected with human feelings and enjoyments must necessarily rest.

His religious education.

In a philosophical education, religion must, of necessity, find a place, because Veneration is implanted in the mind, and the Divine Being is its highest and most legitimate object. Religion, in short, is the pouring forth of the emotions, Wonder, Veneration, Hope, and Conscientiousness, in admiration and gratitude for everything that is excellent bestowed upon man, and it is as necessary to the enjoyment of the higher sentiments, as knowledge is to the gratification of the intellectual faculties. It is of the greatest utility, also, as an aid in directing and controlling the whole propensities and sentiments. Suppose that an individual has so little of Causality as not to be able to perceive forcibly the advantage of obeying the moral laws, or so weak a sentiment of Conscientiousness as not to feel strongly the obligation of doing so; if he has a powerful Veneration, he may be induced to yield obedience, from the sentiment of awe and respect to God, because He has commanded it. According to the system which I now recommend, Veneration would be supported in habitual activity in the affairs of life, for the mind would be continually impressed with the perception, that everything external, and also every internal faculty and emotion, have been created by a Superior Intelligence, and adapted to each other; and that our business is to discover the laws of their adaptation, and our duty to obey them; that our reward is happiness, and our punishment suffering, according as we observe or neglect them. In short, we would feel Providence operating around as in every event and occurrence, soliciting us to virtue and enjoyment; admonishing us, by gentle inflictions of uneasiness, that we are deviating when we quit the right path; and overtaking us with serious calamity, only when we have widely erred.

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[1] This is explained and developed in George Combe's work, "The Constitution of Man *considered in relation to external objects.*"

His religious education.

Add to all this intellectual instruction, a regular training of the propensities, by exercising each on its appropriate objects,—by making the child practice Benevolence to cultivate that sentiment, practice Devotion to cultivate Veneration, practice Justice to cultivate Conscientiousness; and then his education will be complete.

The TRAINING required.

Now, all this course of education may be apprehended by ordinary knowing and reflecting faculties and average sentiments; and if you imagine young men and women entering into life with this elementary knowledge, and these principles of thinking and acting, how different would their course be from that of the present generation! Most of our present systems of education are felt to be practically useless. It is a very old truth that men on leaving school have their education to begin anew; they have learnt nothing which is of service in the affairs of life, beyond reading, writing, and accounts as the instruments of business and of acquiring knowledge. They have no definite views of the nature of man, and of human institutions,—no general principles by which to regulate their conduct,—and are left to grope to right and left, as their propensities and sentiments impel them, till, when about to leave the world, they begin to see, with the eyes of

The effects of such a course of study and training.

experience, the faults they have committed, and the course they ought to have pursued.

The results of this mode of instruction would be very different from that of the common methods of education. In the first place, the knowing and reflecting faculties would be stimulated and gratified in receiving the knowledge, and the mind would be furnished with a vast store of ideas on which these powers might be exercised in future life; and, secondly, it would be infinitely easier to obey the laws of nature, after understanding them, than to do so in blind compliance with precepts, when the reasons for obedience are not understood. This will be clear by another example.

This illustrated in regard to nervous affections.

The higher classes of society, who are above the necessity of personal labour, are frequently tormented with what are called nervous affections. Suppose, then, that, on the present system of education, you are told that the way to avoid this evil, is to exercise the mind and the body. This is quite true; but the communication comes to you like an oracular annunciation. It addresses Individuality alone as a matter of fact, and you take no steps to exercise either mind or body. On the new system, you would be instructed, in the first place, in the nature of the nerves and brain, and be familiarised with the causes which preserve them in health, and those which lead them into disease. You would be informed, for instance, that every mental faculty is connected with an organ in the brain; that when the organ is healthy the mental power acts with vivacity and pleasure; that when it is diseased it originates painful sentiments, and every mental effort is attended with uneasiness; that the brain, as part of the body, is nourished by the blood; and that the quality of the blood depends on the perfection of digestion, and digestion on the proper regulation of food, air, and exercise;—and hence that nervous affections are just diseases of the organs of the mind; that the cares, depressions, anxieties, forebodings, listlessness, and countless miseries of the nervous patient, all proceed from imperfect action in the brain; and that this disorder cannot be removed, except by removing the causes which produced it, or, in other words, by taking air and exercise, and by regulating food and sleep. Employment to the mind again favours recovery—and why?—because it exercises those mental organs, and promotes their health, the want of which exercise was the great cause of their disease.

Imagine a young lady instructed in science of this kind as a matter of common education, and taught from infancy to act on its principles, how many more motives would she possess to follow a

The motives furnished by true education.

course of living calculated to keep off nervous attacks, than under the present system, when nobody imagines they have anything to do with the physical institutions of the Creator, when it is a general notion that the mind is not connected with or affected by matter at all, and when some even imagine that diseases are sent by Providence, without the least relation to the conduct of individuals in averting or inducing them! The view of Providence which the new system would present would be very different. It would represent the external world and the human constitution fitted to each other by the most exquisite wisdom, so as to produce health and enjoyment to man, provided he chose to conform to the laws which the Creator had established to regulate the physical and mental powers. By obeying these, we have the positive assurance of reward, in the joyous exercise of our faculties; by disregarding them, we induce suffering, and receive the just punishment of our disobedience and neglect; and, in either case, we look to the Creator as the fountain of everything that is excellent, and as the benignant author of all our enjoyments, while we impute, to our own ignorance and wilful neglect, the evils and sufferings that overtake us.[1]

The general principles of the education required.

If there be any degree of truth in the views now propounded, the question, "What should secular education embrace?" may be easily answered. It should embrace *Instruction* in the qualities, modes of action, relations, and purposes of the things and beings by means of which the government of the world is maintained; and also *Training* of the whole faculties, animal, moral, and intellectual, to *action* in conformity with the order of Providence.

The particular branches of instruction.

The particular branches of instruction should be the following:—

READING and WRITING, as the means of acquiring, recording, and communicating knowledge.

ARITHMETIC, ALGEBRA, and GEOMETRY, as instruments of numeration and calculation.

GEOGRAPHY: The object of this science is to describe the natural and artificial boundaries of the different countries of the world, and their sub-divisions; also to enumerate the towns, rivers, lakes, &c., which they contain. With these should be combined a description of the inhabitants, institutions, soil, climate, and produce of each country, and the relations of these to the objects and beings of other countries. Simple descriptive geography addresses chiefly the intel-

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[1] From MSS.

The particular branches of instruction, and the purpose and manner of their teaching.

lectual faculties of Form, Size, and Locality. When enriched by the additions now mentioned, the science would interest the feelings and excite the reflecting powers.

NATURAL HISTORY embraces the description of all the objects of the mineral, vegetable, and animal kingdoms. In teaching it, the young should be trained to accurate observation of objects, and of their qualities, relations, and modes of action.

CHEMISTRY: This science expounds the minute composition of natural objects, and the proportions and laws of combination of their parts, with their modes of action. It affords striking examples of design, order, and invariable sequence, in the constitution and modes of action of material objects; and may be used to demonstrate to the young, that the material world is actually and practically governed by Divine wisdom.

ANATOMY and PHYSIOLOGY: These sciences unfold the structure, functions, relations, and laws of the different parts of which organized bodies are composed. When to these elements of instruction is added information concerning the external circumstances, and also the modes and degrees of action of the organs which produce health and disease, and the certain connection between infringements of these conditions and pain and suffering, and eventually premature death, the pupil may be led to comprehend that his health and life are, within certain limits, committed to his own discretion, and that the Divine power is constantly operating, in and through his organs, for his advantage and enjoyment, while he acts in conformity with the laws of his constitution.

NATURAL PHILOSOPHY treats of the qualities, relations, and modes and laws of action of bodies, apart from their chemical and vital phenomena. Like Chemistry and Physiology, it addresses in an especial manner the reflecting intellect of man, and is calculated to expand his mental powers. By increasing his knowledge of the scheme of creation, it puts it in his power, to a certain extent, to co-operate in the plans of Providence for his own improvement.

THE PHILOSOPHY of MIND: The objects of this science are the external senses, and the internal faculties of emotion, observation, and reflection. It can be studied successfully only by means of reflection on consciousness, and observation of the organs of the several faculties, and the influence of their size, age, health, disease, and training, on the mental manifestations. The mind of man, in so far as he is concerned, forms the centre to which the objects of all the other sciences are related; and his deepest interest is involved in knowing accurately what these relations are, and how he may regulate his conduct in conformity with them.

The particular branches of instruction, and the purpose and manner of their teaching.

LITERATURE, POETRY, PAINTING, SCULPTURE, and all the useful and ornamental arts, find their principles in the constitution of the human faculties, and their relations to the objects of external nature, and cannot be thoroughly and scientifically understood until these are comprehended.

NATURAL RELIGION belongs to Secular education, and should aim at teaching the young to comprehend, that the whole objects and phenomena treated of in the sciences are the institutions of God; that the relations of the human mind and body towards them are fixed and unalterable; that the whole are, to a certain extent, cognisable by the human faculties; and that we are bound by duty to God, as well by a regard to our own welfare, reverently and diligently to study these, and to regulate our own conduct in conformity to their modes of action. Above all, the pupil should be *trained habitually to act* on the knowledge thus communicated to him.

The extent to which these subjects should be taught.

I do not mean that all the arts and sciences should be taught to every child, in the manner and to the extent in which they are now expounded in our universities and higher seminaries of education. All I here propose is to unfold principles and views which may form the groundwork, and serve as guides to the practical evolution of a sound system of secular education. The details will be best reached after we have agreed upon the outline. If every teacher will view himself as commissioned to communicate to his pupils practical instruction concerning the order of God's secular Providence, and the *means*[1] by which it is administered, and to train them to act in accordance with it,—the things necessary to be taught, as well as the best mode of teaching them, will speedily be discerned.

If the reader will visit our common schools, and estimate the things at present taught and the modes of teaching, with this idea in his mind as his standard, he will speedily be able to judge to what degree they are fulfilling the object of training the young to act in accordance with the order of God's secular Providence. Even our

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[1] George Combe views the various sciences, physical, mental, moral, and social, as revealing, in the laws they discover, not only God's *moral* government of the world, but the very and only *methods* or *means* by which it is carried on, acting in accordance with which is necessary to happiness. Hence the importance he put on instruction in the subjects which give this knowledge, in order to fit men to act in conformity with this moral government, by obeying these laws in all departments. See his ideas on this subject explained more fully in Part Second, chap. v.; and in his "Science and Religion."

The defects of education in view of these principles:

churches may be submitted to the same test with advantage; for they also profess to show the way in which man should walk on earth, as well as to point out the gate that leads to heaven. Their *secular* instruction, therefore, must be perfect or imperfect, in proportion to its success in expounding the *means* by which we may discover and fulfil the requirements of God's natural laws.

In secular instruction;

The arts of reading and writing have hitherto been considered the chief elements of secular education for the people; while Bible-precepts and catechisms have been viewed as constituting religious instruction. But, if the principles now expounded be correct, the imperfections of this curriculum will be obvious. Reading implies merely the knowledge of the written or printed artificial signs or words, by means of which any nation or tribe express their thoughts; and writing is the forming of these signs ourselves. The signs do not convey their own meaning; they are merely sounds and forms; and we must be instructed in their meaning before we can derive any substantial benefit from them. Instruction in the objects, qualities, relations, and modes of action of the beings and things which the words are employed to designate, should, therefore, go hand in hand with the teaching of words themselves.

In religious instruction;

In regard to religious instruction, again, the Bible constitutes the only directory recognised in Protestant countries concerning the mode of securing everlasting happiness. The object of the school for religion, therefore, may be held to be to unfold the means by which eternal interests may be best secured, and to train the young to practise them. Although the Bible contains, as subservient to this end, numerous valuable precepts for regulating secular conduct, yet, not being intended to supersede the use of observation and reflection, it embodies no complete exposition of the special natural agencies by means of which the order of God's secular Providence is *now* executed and maintained. Moreover, it does not expound the arrangements in nature by which even its own precepts in regard to the duties and interests of this life are enforced and rendered practical.

The amount of it necessary in schools.

Hence secular instruction, such as is now recommended, is necessary to render practical the moral precepts even of the Bible itself. Every precept of the Bible, therefore, which has a counterpart in nature, and which is supported and enforced by the order of God's natural Providence, may legitimately be introduced into secular schools. It is impossible, however, to draw a precise line of demarcation between secular and religious education, because, in point of fact, when we instruct children in the order of nature, and train them to reverence it, we teach them religion as well as science. Those doctrines only which rest exclusively on the authority of supernatural revelation seem to belong peculiarly to the school for religious teaching.

Effects of the broader education advocated.

It appears to me that it would be difficult to exaggerate the beneficial effects that might eventually be elicited from a scheme of secular education founded on these principles. The young—trained to direct their observing faculties to the study of the things and beings which exist, as instruction addressed to them by God, and their reflecting faculties to the study of the causes of natural phenomena; and taught, moreover, to comprehend, that, to the action of these causes, certain consequences have been attached by Divine intelligence, which, at every moment, affect their own condition, and which they can neither alter nor evade, but to which they may, or may not, as they choose, accommodate their conduct—the young, I say, thus instructed and trained, might, perhaps, at last be enabled to comprehend that they are actually placed under a real and practical Divine government on earth, and they might be led to feel some disposition to act in harmony with its laws.[1]

The physical and economical sciences can be generally taught.

The proposal that men in general should be taught Natural Philosophy, Anatomy, Physiology, Political Economy, and the other sciences that expound the natural laws, has been sneered at as ridiculous. But I would ask, In what occupations are human beings so urgently engaged that *they have no leisure* to bestow on the study of the Creator's laws, from the influence of which they cannot escape? The delivery of a course of lectures on Natural Philosophy would occupy sixty or seventy hours; a course on Anatomy and Physiology, the same; and a pretty full course on Phrenology could be delivered in forty hours! These, once or twice repeated, would serve to initiate the student in the sciences in question, so that he could afterwards advance in them by the aid of observation and books. Is life, then, so brief, and are our hours so urgently occupied by higher and more important duties, that we cannot afford these pittances of time to learn the laws that regulate our existence? No! The only difficulty lies in exciting the *desire* for knowledge; for when that is attained, *time* will not be wanting.

No idea can be more preposterous, than that human beings have no time to study and obey the natural laws. These laws, when neglected,

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[1] What should Secular Education embrace? pp. 31–34.

Time should be found for teaching them.

punish so severely that the offender loses more time in undergoing his chastisement than would be requisite to obey them. A gentleman extensively engaged in business, whose nervous and digestive systems were impaired by neglect of the organic laws, was desired to walk in the open air at least one hour a day; to repose from all exertion, bodily and mental, for an hour after breakfast, and another hour after dinner (because the brain cannot expend its energy to good purpose in thinking and in aiding digestion at the same time); and to practise moderation in diet. This last injunction he regularly observed, but he laughed at the idea of his having three hours a-day to spare for attention to his health. The reply was, that the organic laws admit of no exception, and that he must either obey them or suffer the consequences; but that the time lost in enduring the punishment would be double or treble that requisite for obedience; and, accordingly, the fact was so. Instead of keeping an appointment, it was usual for him to send a note, perhaps at two o'clock in the afternoon, in these terms: "I was so distressed with headache last night, that I never closed my eyes; and to-day I am still incapable of being out of bed." On other occasions, he was out of bed, but apologised for incapacity to attend to business, on account of an intolerable pain in the region of the stomach. In short, if the hours lost in these painful sufferings had been added together, and distributed over the days when he was able for duty, they would have far outnumbered those which would have sufficed for obedience to the organic laws—and with this difference in the results: by neglecting them, he lost both his hours and his enjoyment; whereas, by obedience, he would have secured aptitude for business, and a pleasing consciousness of existence.[1]

4. FEMALE EDUCATION: WHAT SUBJECTS SHOULD BE TAUGHT TO WOMEN.

The importance of the education of woman.

Especially would I press upon your attention the importance of educating women, not merely in embroidery and music, but in a knowledge of things, especially in a knowledge of the Human Constitution. Every man must acknowledge that Woman operates on human character in the most powerful manner. She works on soil highly susceptible of impressions. To send her out into society to be a wife and mother without one philosophical idea, appears to me utterly barbarous and absurd.[1] Irrational as has been the education of boys the education of young ladies has been, and is, much more so.[2]

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[1] Constitution of Man, 9th edit., p. 193-94.

(1.) She should be prepared for her maternal and domestic duties.

I regard the great secular business of female life to be the producing, nurture, and rearing of children; the due management of domestic affairs; and the cultivation of those graces, virtues, and affections which shed happiness on the family circle. These occupations are equally important to women as professions are to men; and under a proper system of education, women should be taught every species of knowledge, and instructed in every accomplishment, which may directly contribute to the proper discharge of their duties. At the earliest dawn of intellect and feeling, the little girl manifests the tendency of her nature towards maternity. The doll is then the most absorbing object of interest that can be offered to her attentions. In maturer years, the mimic infant is laid aside, but the feelings which found delightful expression in the caresses bestowed on it are not extinct. The nature of the woman is the same as that of the girl; the conventional fashions of society may induce her to draw a veil over her affections; but they glow internally, and it will be among her strongest desires to give them scope in an honourable and useful field. If this be woman's nature, her education should bear direct reference to the cultivation of it; in short, next to religion, the maternal and domestic duties should be regarded as the leading objects of her existence, and her training should proceed in harmony with this great end. High physical, moral, and intellectual qualities, are necessary for the due fulfilment of these purposes. Indeed, no occupations allotted to man afford a higher field for the exercise of the best elements of mind than those here assigned to woman.

(2.) The importance of her health and physical education.

The physical quality of highest importance in a woman, viewed as a mother, is health. The human body is composed of a variety of organs, each endowed with a particular function; and health is the

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[1] Napoleon said one day to Madame Campan, "The old systems of education seem to be worth nothing. What is there wanting, in order to train up young people properly in France?" "Mothers!" replied Madame Campan. This word struck the Emperor. "Well," said he, "therein lies at once a complete system of education. It must be your endeavour, Madame, to form mothers who will know how to educate their children!" Rousseau put the vital importance of female education in his famous sentence in the *Emile*, "Men will be always what women please; if you wish men to be great and good, teach women what greatness and goodness are."

[2] American Lectures, edited by Boardman, p. 368.

(2.) The importance of her health and physical education.

result of the normal action of the whole in harmonious combination. Every organ is disposed, other circumstances being equal, to act with a degree of energy in proportion to its size; and as disease is the consequence either of under-action or of over-action, their proportions to each other in size are points of fundamental importance in regard to health. The handsomest figure is one in which the abdomen, chest, and head, are all well developed; because, on the first depends digestion, on the second, respiration, and on the third, mental energy. The limbs will rarely be found deficient when the size and proportions of those regions are favourable. By the appointment of a wise Providence, a human figure of the finest proportions for symmetry and beauty, is, *cæteris paribus*, the most favourably constituted for healthy action. If the carriage of the body be erect, and the motions easy and graceful, these are indications that the bones are solid and the muscles energetic,—that the blood is well nourished and well oxygenised, and that it circulates freely. If the countenance beam with intelligence and goodness, this is an indication that the moral and intellectual regions of the brain predominate in size, and are active. Such an individual is, by birth and constitution, one of nature's nobility. A woman thus endowed, whose intellect was also instructed to such an extent that she could maintain her high qualities unimpaired through life, would, as a mother, be a treasure of the highest value.

(3.) She should be trained how to manage children.

For many years, the lives of children depend almost exclusively on the care of the mother. Young women, therefore, should be taught not only how to regulate their own habits, so that they may preserve their health and vigour, but also how to treat children, both as physical and mental beings. This information would be attended with great advantages, whether they subsequently discharged maternal duties or not. The very study of the structure, functions, and proper treatment of children, with the view of exercising the kindly affections towards them, would be delightful in itself; and the young students, if they did not become mothers, would at least be sisters, aunts, or friends, and could never want opportunities to practise their knowledge. Information of this description is not neglected by women with impunity. It appears by the London bills of mortality that between a fourth and fifth of all the children baptized die within the first two years. There is no example among the more perfect of the lower animals of such a vast mortality of the young, where external violence is withheld; so that woman, with reason, and morality, and religion as her gifts, makes a poor figure in her maternal character, contrasted with the inferior creatures, acting under the guidance of instinct alone. Much of this mortality arises from imperfect health in the parents, so that the children are born with feeble constitutions; but much is also directly owing to injudicious treatment after birth.

(4.) She should be taught Anatomy and Physiology.

One important branch of female instruction, therefore, ought to be the treatment of children as physical beings. Lectures should be instituted to communicate this information, and the basis of it ought to be Anatomy and Physiology. The minutiæ of these sciences need not to be treated of, but the leading organs and their uses, on which health and mental activity depend, should be explained. The human figure may also be advantageously studied in statuary and painting, not only as an interesting object of taste, but as a source of useful practical information. A mother whose eye was familiar with the proportions of the vital organs most conducive to health, would watch with increased attention and intelligence the progress of the nutrition of her children, and their habits and postures. The tumescent abdomen, the flat and narrow chest, the slender limbs, the large head, and the curving legs and spine, would become perceptible to her practised eye, months before they would arrest the attention of an uninstructed and unreflecting woman; and on these months, when disease was still only in its incipient stage, might depend the life of her cherished offspring.

These studies not indelicate.

It is a great error to suppose that these studies are necessarily shocking and indelicate.[1] They are so only in the eyes of ignorance and prejudice. Indelicate descriptions of *abuses* of the bodily functions are highly objectionable; and the enemies of knowledge have represented this to be the instruction which I recommend. Nothing can be more unlike it. The Creator has constituted every organ of the body, and, in studying its structure and uses, we are contemplating his workmanship. There is no inherent indelicacy in the human figure. It is the temple of the mind, and its Author has impressed on it a beauty of form and an elegance of proportion that render it capable of exciting the most pure and refined impressions in cultivated and virtuous minds. Where indelicacy is felt, its source must be looked for not in the object, but in licentious feelings, or in a perverted and neglected education in the spectator. That individual who is able to associate only impure ideas with the most exquisite specimens of the fine arts, resembles a man in whom the aspect of a rich and beautiful domain should excite only feelings of envy, cupidity, and discontent. To call the human figure indelicate, is to libel Eternal Wisdom.

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[1] George Combe tells us that when he began, in 1832, to give lectures on various subjects to *mixed* audiences, though not on Physiology, and to recommend the practice in his lectures, "it was objected to as improper and dangerous!" (Preface to 2d edit. of "Popular Education.") The teaching of Physiology to women was then specially assailed on the same grounds. So recently as 1864, when Mr T. Horlock Bastard founded the Milldown School at Blandford, Dorset, and for years after, he says that the teaching of this subject to the boys and girls there was regarded as "indelicate and objectionable." (See Part Second, chap. vii., 7.) The same objection has been heard since then.

They are necessary, from the human constitution.

The Creator has taught the inferior creatures to rear their young successfully by instinct; but he has not conferred this guide on the human mother. One of two conclusions, therefore, appears to follow. He has intended either that she should use her faculties of observation and reflection, in acquiring all the knowledge requisite for the proper treatment of offspring, or that she should recklessly allow a large proportion of them to perish. One or other of these conclusions is really inevitable; because, as He has denied her instinct, and as she cannot obtain knowledge to supply its place without application of her intellect to the study of the laws of nature,—which instinct prompts the lower creatures to obey without knowing them,—the Creator must have intended either that she *should* study these laws, or give up her offspring in vast numbers to destruction. The latter result actually happens, to the enormous extent just mentioned; and, if it be the necessary consequence of the Creator's gift of reason, in place of instinct, to woman, I submit to condemnation; but if it be the natural effect of her not having employed that reason in a proper direction, I say that He has commanded her to study His works. If this conclusion be just, we may rest assured that she may safely, and in perfect consistency with feminine delicacy, study the Creator's designs, power, and goodness, in the structure, functions, and adaptations of the human body; and that she will not find her higher faculties outraged, but exalted and refined, by the knowledge which will thus be revealed.[1]

The extent and purpose of their study.

It has been said, that it is better to call in the aid of a physician than to study medicine for one's self. But I do not propose that young persons in general should study medicine. My recommendation is simply, that they should be taught the structure and functions of the body with a view to preserving their health, to fit them to judge when it is proper that medical advice should be obtained, and to enable them to act like rational patients in the hands of a skilful physician, when they are so unfortunate as to fall into disease. Every medical practitioner of a humane and honest mind, laments the unnecessary suffering and expense to which he sees his patients exposed through lack of this information.[1]

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[1] The public has strikingly responded to the views stated in the text; as is evinced by the extensive sales of the works by Dr A. Combe, "On the Physical and Moral Management of Infancy," and "Physiology applied to Health and Education," and of similar works by other authors.—(G. C.) The subject has made much more gratifying progress since George Combe's time.

The necessity for Anatomy being taught.

It may be imagined that rules for the preservation of health may be taught without Anatomy being studied. But all such instruction is empirical. The authority of any rule of health is the fact that Nature is constituted in such and such a manner, and will act in her own way whether attended to or not—for good if obeyed, and for evil if opposed. This authority is rarely comprehended without instruction concerning the foundation on which it rests. The rule, otherwise, resides in the memory rather than in the understanding; and the possessor has no power of modifying her conduct, and adapting it judiciously to new circumstances. She knows the rule only, and is at a loss, whenever any exception or new combination not included in it presents itself. The Professor of Scots Law most acutely and judiciously directed his students, when reading about the law of title-deeds, to take the parchments themselves into their hands, and to look at them, assuring them that familiarity with their mere physical appearance would aid the memory and judgment in becoming acquainted with the doctrines relative to their effects. Philosophy and experience equally confirm the soundness of this observation; and it applies, in an especial manner, to rules relative to health. When a good description of the respiratory organs, illustrated by prepared specimens or good drawings, has been given to a young woman, she understands much better, feels more deeply, and remembers much longer and more clearly, the dangerous consequences of exposing the throat and breast to a stream of cold air or to a sudden change of temperature, than when she has only heard or read precepts to avoid these and similar practical errors.

(5.) She should be trained to direct the culture of her children.

Another leading branch of female education should be, that kind of knowledge which will fit a woman to direct successfully the moral and intellectual culture of her children. This embraces a vast field of useful and interesting information. If we should ask any mother, who has not studied mental philosophy, to write out a catalogue of the desires, emotions, and intellectual powers, which she conceives her children to be endowed with; to describe the particular objects of each faculty, its proper sphere of action, the abuses into which it is most prone to fall, and also the best method of directing each to its legitimate objects, within its just sphere, so as best to avoid hurtful aberrations,—we know well that she could not execute such a task. I entreat any lady, who has a family and who has derived no aid from mental philosophy, to make the experiment for her own satisfaction. She will discover, in her own mind, a vast field of ignorance, of which, before making trial, she could not have conjectured the extent.

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[1] See some admirable observations on this subject in Dr Andrew Combe's works, above mentioned.

The study of the mental faculties recommended.

The earnest study of Phrenology, or, in other words, of the primitive faculties and their scope of action, should form an indispensable step in practical education. There are few mothers who do not sometimes discover wayward feelings, particular biases, or alarming tendencies breaking out in their children, in some instances when they least expect them; and I appeal to their own consciousness, whether they have not, in alarm and bewilderment, wondered what these could be, and lamented their own inability to comprehend or to guide them. Mothers who have experienced this darkness, and have subsequently studied Phrenology, have appreciated the value and importance of the light which it has shed on their practical duties. While this edition is in the press, a talented mother of a talented son writes to me thus: "There has ever been, during the past years since my son's babyhood, a shadow in my mind that something *more tangible* than what is usually thought sufficient to guide young men, ought to exist somewhere, although I was ignorant equally of what that was, and where and to whom I should apply to obtain it. The works on Phrenology and its applications are fast investing my shadow with a body."

It is necessary for training the faculties.

I am not pleading the cause of Phrenology, for the sake of making proselytes. My proposition is general, that a mother cannot train faculties without knowing their nature, objects, and spheres of activity; and if any woman can find practical information on these points without the aid of Phrenology, I earnestly recommend her to seek it out and apply it.[1] To Phrenology, I owe the views of human nature and its capabilities which have most benefited and delighted my own mind; but I am far from pressing it on others, who prefer to consider the mind as if it had no known connection with organization. If nature *has* connected it with organs, such individuals will meet with their reward in disappointment.

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[1] See this subject of the importance of the study of Mental Philosophy to Mothers, in home education, treated of more fully in Part Second, chap. iv.

(6.) She should study the Natural Sciences.

Let us now suppose a mother to be instructed concerning the physical constitution and mental faculties of her children; she will find it expedient next to become acquainted with the objects in the external world to which these faculties are related. We are told that it is a "delightful task to rear the tender thought, and teach the young idea how to shoot." The power of doing so seems to imply some knowledge in the teacher of the direction in which the mind will tend to shoot, and of the objects which it will desire to reach; in other words, such acquaintance with the external world as will enable the mother to excite the moral sentiments and intellect of the child, and operate on the happiness of the future man or woman. In female training, the communication of this knowledge is too much neglected. It implies the study of the elements of Chemistry, Natural History, and Natural Philosophy, as well as familiar acquaintance with the social institutions of our own country, and the civil history of nations. If an ill-informed mother have an acute and clever child, how is she puzzled by its questions! And if she possess any natural sensibility, how keenly does she feel and regret her own ignorance, when it forces her to evade, instead of furnishing rational and instructive answers to, its ingenious and interesting inquiries! I earnestly recommend to such mothers to attend, as speedily as possible, lectures on science when within their reach; for no kind of information so much delights an inquisitive child as that which unfolds the course of nature.

The importance of these in training her children.

The mother has it in her power to exert a great and permanent influence on the character of her children; she makes the deepest impressions, and supplies the earliest ideas that enter their minds; and it is of the utmost importance to society at large, that she should be well qualified for so momentous a duty. Children who are not gifted with originating powers, which is the case with nineteen out of every twenty, reflect slavishly, when they grow up, the impressions and ideas which their mothers, nurses, companions, teachers, and books have infused into their minds; and of these the authority of the mother is not the least. "It was said by one of the most extraordinary of men, Napoleon, who was himself, as he avowed, principally indebted to maternal culture for the unexampled elevation to which he subsequently rose, that the future good or bad conduct of a child depends entirely on the mother."[1] Let women remember, therefore, that they may sow the seeds of superstition, prejudice, error, and baneful prepossessions; or of piety, universal charity, sound sense, philosophical perception, and true knowledge, according to the state of their own attainments; and let them also ponder well the fact, that the more thoroughly destitute they are of sound information, and of rational views of mind and its objects, the less they are aware of their own deficiencies, and of the evils which their ignorance is inflicting on another generation.

(7.) The value of refined accomplishments.

In addition to the branches of solid instruction before mentioned, women should be taught such elegant and refined accomplishments as they individually are capable of learning. These throw over the domestic circle a charm which cannot be too highly prized. What I condemn is, the teaching of music, drawing, and conventional manners, to the exclusion of all other kinds of knowledge. An enlightened, refined, and elegant woman is the most lovely and perfect of animated beings; and no philosopher, in recommending useful instruction, would desire to see abated, by one iota, the graces which adorn the female character.

Authorities in favour of these views of female education:

These views may appear to be so consonant with reason, that they support themselves; but as I am addressing a popular assembly, I solicit permission to strengthen them by the opinions of three contemporary authors.

The evils attendant on the imperfect education of females belonging to the upper ranks are forcibly expounded in a late number of the *Foreign Quarterly Review* (No. xxiii. p. 127).[2] "Nothing," says the reviewer, "is more remarkable in the present age of mental excitement, than the care with which, by most of the prevalent customs and a system of fashionable education, the minds of the generality of females are consigned to inactivity and utter uncompanionable insipidity. Whilst the expression of almost every elevated feeling is repressed as inconsistent with refinement, every artificial want, every habit of selfish gratification, is as much as possible indulged. Active exercise in the open air, cheerful country walks, a joyful participation of the hearty pleasures of any society, in which every movement is not taught by the posture-master, or

(1.) The *Foreign Quarterly Review.*

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[1] Moore's notices of the Life of Byron, 12mo, vol. ii. p. 35. Napoleon's proposition is too general. The father's qualities influence the child; but those of the mother do so still more powerfully.—(G. C.)

[2] From Review of "Histoire Philosophique de l'Hypochondrie et de l'Hysterie," by C. Frederic Dubois; in 1833, when the above lecture was delivered.

conversation conducted according to the rules laid down in books professing to teach female duty and behaviour;—all this would be inconsistent with the general aim of all classes to imitate the manners and habits of the highest. All kinds of reading, except of works the most frivolous, is considered ungenteel, or at least singular; and any display of deep and unsophisticated sentiment excites universal pity. The beauties of nature, the triumphs of science, the miracles of art, excite no more than a languid expression of wonder. To apply the mind to read or understand such things, would destroy the apathetic elegance which those desire to preserve who still believe knowledge to be a very good thing for persons who live by it. With as much care as the natural proportions of the female figure are destroyed by stays made upon abstract principles, is the mind cribbed and cabined by custom and fashion. Then, universal ambition leads to universal difficulties as to fortune; and the only serious duty as to daughters is, to obtain an advantageous settlement, which, whether gained or missed, is too often thus the cause of cureless discontent, injured health, and all the nervous maladies incidental to an ill-managed mind and infirm body."

The *Foreign Quarterly* on female education.

"The system by which young ladies are taught to move their limbs according to the rules of art, to come into a room with studied diffidence, and to step into a carriage with measured action and premeditated grace, are calculated only to keep the degrading idea perpetually present that they are preparing for the great market of the world. Real elegance of demeanour springs from the mind: fashionable schools do but teach its imitation, whilst their rules forbid to be ingenuous. Philosophers never conceived the idea of so perfect a vacuum as is found to exist in the minds of young women who are supposed to have finished their education in such establishments. If they marry husbands as uninformed as themselves, they fall into habits of indolent insignificance, without much pain: if they marry persons more accomplished, they can retain no hold of their affections. Hence many matrimonial miseries, in the midst of which the wife finds it a consolation to be always complaining of her health and ruined nerves."—(Ib., pp. 128–9.)

(2.) Mrs John Sandford.

"Knowledge," says Mrs John Sandford, "should be appreciated by women for its own sake, and not merely as a distinction. The superiority of cultivated women is in every thing very apparent. They have been accustomed to think and to discriminate, and their opinion is not a mere momentary impulse. Their sphere, too, is enlarged; they are not so much actuated by selfish feelings, or so liable to receive partial, and consequently erroneous, impressions. What an easy dupe to empiricism or design is a half-educated woman! With sufficient acquirements to be vain, and sufficient sensibility to be soon imposed on, she may be easily seduced from principles which she has received only on the authority of others, and which she is therefore ill-prepared to defend."—"Disorder is the accident, not the consequence, of talent; and as it is the more conspicuous, so it is the less excused, when accompanied with mental superiority."[1]

(3.) Mrs Emma Willard, of America.

I conclude this branch of the subject with the following just and eloquent observations of an American authoress, Mrs Emma Willard.[2] It forms part of an admirable address which she presented, in 1819, to the Legislature of New York, proposing a Plan for Improving Female Education; and which address led to the formation of an extensive establishment at Troy, of which she was long the head. "Not only," says she, "has there been a want of system concerning female education, but much of what has been done has proceeded upon mistaken principles. One of these is, that without a regard to the different periods of life, proportionate to their importance, the education of females has been too exclusively directed to fit them for displaying to advantage the charms of youth and beauty. Though it may be proper to adorn this period of life, yet it is incomparably more important to prepare for the serious duties of maturer years. Though well to decorate the blossom, it is far better to prepare for the harvest. In the vegetable creation, nature seems but to sport when she embellishes the flower, while all her serious cares are directed to perfect the fruit.

"Another error is, that it has been made the first object in educating our sex, to prepare them to please the other. But reason and religion teach that we too are primary existences; that it is for us to

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[1] From "Woman in her Social and Domestic Character" (London 1831), by Mrs John Sandford, wife of the late Rev. John Sandford, B.D., Archdeacon of Coventry.

[2] Mrs Emma Willard was a distinguished American educator, born in Connecticut in 1787 and dying so recently as 1870. She was a born teacher, and, during a long life, devoted her great talents to its improvement, especially in regard to Female Education, of which she had advanced views, and was long the solitary advocate. She is best known for her great school for girls at Troy, near New York, in which she exemplified, with eminent success, the principles she so eloquently pleaded for. She worked actively in the cause of education in many ways, and did very much to improve its principles and practice in America and elsewhere; she is the author of several class-books on Geography, History, and Morals, and of "A Plan for Improving Female Education," published in 1819, reviewed and extracted from in *Phren. Journal*, vol. viii.

Mrs Willard on Female education.

move, in the orbit of our duty, around the Holy Centre of Perfection, the companions, not the satellites of men; else, instead of shedding around us an influence that may help to keep them in their proper course, we must accompany them in their wildest deviations.

"I would not be understood to insinuate (continues Mrs Willard), that we are not, in particular situations, to yield obedience to the other sex. Submission and obedience belong to every thing in the universe, except the Great Master of the whole. Nor is it a degrading peculiarity to our sex to be under human authority. Whenever one class of human beings derives from another the benefits of support and protection, they must pay its equivalent, obedience. Thus, while we receive these benefits from our parents, we are all, without distinction of sex, under their authority; when we receive them from the government of our country, we must obey our rulers; and when our sex take the obligations of marriage, and receive support and protection from the other, it is reasonable that we too should yield obedience. Yet is neither the child, nor the subject, nor the wife, under human authority, but in subservience to the Divine. Our highest responsibility is to God, and our highest interest to please him; therefore, to secure this interest our education should be directed.

"Neither would I be understood to mean, that our sex should not seek to make themselves agreeable to the other. The error complained of is, that the taste of men, whatever it might happen to be, has been made a standard for the formation of the female character. In whatever we do, it is of the utmost importance that the rule by which we work be perfect; for, if otherwise, what is it but to err upon principle? A system of education which leads one class of human beings to consider the approbation of another as their highest object, teaches that the rule of their conduct should be the will of beings imperfect and erring like themselves, rather than the will of God, which is the only standard of perfection."[1]

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[Before George Combe's time, Female Education had been complained of by Erasmus, and been treated of expressly by Fénélon, in his "Traité de l'education des filles" (1687); by Rousseau, in "Emile," &c., at the end of the last century; by Dr Erasmus Dar-

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[1] Popular Education, pp. 58–60 (1833). The most of the above on Female Education had previously appeared in a review by George Combe of Mrs Sandford's work, in the *Phrenological Journal*, vol. vii. (1831–2), though afterwards included in his public lectures before the Edinburgh Philosophical Association, in 1833.

Writers and works on Female education.

win, in "A Plan for the Conduct of Female Education in Boarding Schools," in which he recommends Natural History and the Arts and Sciences; by the Edgeworths, in "Practical Education" (1798); by Hannah More, in "Strictures on the Modern System of Female Education;" and by Jean Paul Richter, in a special chapter of his "Levana" (1806), though this great work was not translated into English till recently. At the time when George Combe agitated the subject, from 1820 (the above was mostly written in 1832) it began to gain increased attention, chiefly, however, in America, through Mrs Willard's efforts and her book already mentioned, in 1819; and by G. B. Emerson "On the Education of Females" (1831). But George Combe gave the fullest exposition of a course of Female Education, which still remains a guide; his exposition of the course of study in this chapter was also delivered to ladies. Since then, the education of women has made wonderful advance, and has issued in the present active efforts to make it broader and more worthy of its importance to the race, and to base it on their constitution as human beings, more than on mere sex and social conventionalities. It has received greater attention in America than in Britain, though here it has received much. Amongst many works on the subject may be mentioned, Aimé Martin's "Education of Mothers," translated, in 1842, by Dr Edwin Lee (London, W. J. Adams), Emily Shirreff's "Intellectual Education, and its influence on the character and happiness of Women" (London, Parker & Son, 1858), Emily Davies' "Higher Education of Women" (London, 1867), Markby's "Practical Essays on Education" (London, 1868), Barnard's "Studies and Conduct" (Hartford, U.S., 1873), Anna C. Brackett's "Education of American Girls" (New York, 1874).

The question of the physical ability of women to undergo hard study like men, or in competition with them, has caused much discussion; the chief exponent of the negative being Dr E. H. Clarke in his "Sex in Education" (Boston, U.S., Osgood & Co., 1873), who has been abundantly replied to in America by Miss Brackett in the work mentioned above, Caroline Dall in "The Other Side," Mrs E. B. Duffey in "No Sex in Education," &c.; and by others in this country.

The subject has branched out also into other important questions, as those of the "Co-education of the Sexes" in school and college, the eligibility of women for the learned professions, notably the medical, their fitness for teaching, &c.[1]—*Edit.*]

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[1] See Female Education in the "Cyclopædia of Education" (New York, E. Steiger; London, Sampson, Low & Co., 1877), a very valuable work, and the first of its kind in English.

CHAPTER II.

A COMPARISON BETWEEN LINGUISTIC, ESPECIALLY CLASSICAL, AND REAL EDUCATION.

Instrumental knowledge.

A YOUNG man is believed by many to have received a good education when he has been taught reading, writing, arithmetic, Latin, and a smattering of Greek. Let us endeavour to estimate the true value of these attainments. They appear to be considerable, and I am far from undervaluing them. They are the *instruments*, by the diligent use of which much useful and practical knowledge of nature and her laws may be attained; but in themselves they do not constitute such knowledge. A few observations will suffice to elucidate this proposition.

The relation between words and ideas.

In regard to language in general, and what are termed "the learned languages" in particular, I remark, that we may have an extensive knowledge of objects that exist, and their relations, with only few words by which to express our notions of them. Thus, a self-taught artizan may advance far into the principles and practice of his art, before he has read books and become acquainted with the terms generally used to designate the objects and processes with which he familiarly deals. Such a man would have more ideas than words; and this would be a great evil, for he could not communicate his knowledge, or receive instruction from books. Other individuals, however, may have more words than ideas, which also would be inconvenient; for they would have the means of communicating knowledge but lack knowledge to communicate; they would be great scholars, but could teach mankind no practical art or science.

Words are merely arbitrary signs for expressing feelings and ideas.[1] It is desirable to possess an ample store of useful information, and

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[1] The question of the relation between words and ideas is, of course, a very old one, and has been very largely and keenly discussed. See George Combe's ideas on it, more fully given in Part Third, chap. iv., and still more fully in his "System of Phrenology," fifth edition, vol. ii., p. 124. See also the above and following passages criticised by Professor Hodgson, in the *Westminster Review* for October 1853. The general question is treated in all works on Logic and Mental Philosophy.

Practical and linguistic knowledge compared.

an equally extensive stock of words; but it is better to have ten ideas, and only ten words to express them, although all the words should belong to one language, than to have only *one* idea, and *ten* words in as many *different* languages for communicating it. For example, a monk, who has only seen a horse passing by the window of his cell, may know that this animal is named in Greek, ἵππος; in Latin, *equus;* in English, *a horse;* in French, *cheval;* in Italian, *cavallo;* in German, *pferd;* and, by some persons, he may be supposed to be highly learned. He is indeed considerably learned, but unfortunately not on the subject of the horse itself, but only on the names by which it is designated in different countries. His stock of real knowledge would be only that which he had picked up by looking at the creature through the window, and would not be in the slightest degree increased by the acquirement of these *six* words to express the *name* of the animal. His original notion of a horse, whatever it was, would continue unextended by all these additions to his knowledge of its names. The person of a man is neither stronger, taller, nor more graceful, because he possesses six suits of clothes, than it would be if he had only one; and so it is with the mind. A youth, trained in a stable-yard, whose attention had been directed to the various qualities of a good hackney, hunter, or race-horse, would be far superior, as a practical judge of horses, to the monk, although he knew the name of the animal only in his mother tongue. He would excel him in selecting, employing, managing, and rearing horses. He would possess ideas about the animal itself—would know what points were good and what bad about it; how it would work in different situations; how it would thrive on particular kinds of food; and in what manner it should habitually be treated, so as to obtain the most complete development of its natural powers. This is *practical knowledge:* acquaintance with words is *learning.*

Language more taught than things.

Hitherto education has been conducted too much on the principle of looking at the world only from the window of the school-room and the college, and teaching the names of beings and things in a variety of languages, to the neglect of the study of the beings and things themselves; whereas man, as a creature destined for action, fitted to control nature to some extent, and, where this is beyond his power, left to accommodate his conduct to its course, requires positive knowledge of things that exist, of their qualities, modes of action, and laws, and has little use for words which go beyond his stock of ideas and emotions.

The function of language.

Language, however, is not to be depreciated or despised. Man is obviously formed to live in society; his happiness is increased by co-operation and interchange of thought and emotion with his fellows; and language, oral and written, is his natural medium of communication. It is of great importance, therefore, to every individual, to possess words sufficient to express all his ideas and emotions, and such expertness in using them, in speech and writing, as may enable him readily and successfully to convey to other minds the precise impressions existing in his own.

The Greek and Latin languages:

Keeping in view, therefore, that language is of importance as a means of communicating what we know and feel, we may proceed to inquire into the value of Greek and Latin as elements of education. The history of their introduction into schools, and of the circumstances which led to their past high estimation, merits our attention.

Their ancient value and their overthrow;

The Greeks and Romans were the earliest nations in Europe who attained to civilization; in other words, they were the first who so far cultivated their mental faculties as to acquire numerous and tolerably precise ideas of government, laws, morals, intellectual philosophy, and the fine arts. In consequence of their minds possessing ideas, their languages contained terms to express them. In the fourth and fifth centuries, the Roman empire was overrun by ignorant barbarians from the north of Europe, whose mental powers, not having been cultivated, had not formed the conceptions now alluded to, and whose languages, in consequence, were as barren as their thoughts. A long night of darkness prevailed over Europe, until, at length, civilization again dawned where it had last set, in Italy. The cities of that country, situated under a genial climate and surrounded by a fertile soil, had, as early as the twelfth and thirteenth centuries, made considerable progress in arts and manufactures; they accumulated wealth, which produced leisure and a desire for refined enjoyment, whence a taste for literature gradually arose.

Their new value at the Revival of Letters.

The manuscripts of Greece and Rome had long slumbered in the cells of monastic institutions. Many of them had been erased to give place to monkish legends; but now they were ardently disinterred. When recovered and understood, they were found to convey more sublime and elegant poetry,—more refined yet nervous eloquence,—more brilliant, pointed, and ingenious wit,—with profounder and juster views on the subjects of law, criticism, and philosophy,—than had been known since the subversion of civilization; and all these treasures, too, embodied in languages so rich, discriminative, and refined, that Europe, in addition to this accession of knowledge, was at once furnished with exquisite vehicles of thought, without the labour of invention.

The original meaning of "learned man."

In these circumstances, Greek and Latin naturally became objects of intense interest and study with all men who aspired to superior intelligence. There was great good sense in this direction of their mental energies; because, at that time, and in their situation, these languages really unlocked to them the richest intellectual stores existing in the world, and put them in possession also of media for communicating their thoughts, greatly surpassing, in refinement, copiousness, and power, any that they could have obtained by their own invention, or found in the literature of their native countries.

For these reasons, colleges, schools, bursaries, and other institutions, were established, for teaching and cultivating the Greek and Latin languages, and they obtained the appellation of "humane literature," LITERÆ HUMANIORES; eminence in them became the passport to fame; and a person intimately conversant with them was dignified with the title of "a learned man."

The growth of modern literature.

In the course of time, however, the nations of Europe, aided by the invention of printing, and latterly, by stupendous discoveries in science and the arts, as well as by the wide diffusion of Christianity among the people, far outstripped the Greeks and Romans in their most useful attainments. The Italians, French, English, and Germans made gigantic strides in knowledge, morality, and religion; and their languages, by a law of the human constitution, kept pace with their emotions and ideas. England could long ago boast of a BACON, a SHAKSPEARE, a MILTON, a NEWTON, and a LOCKE; and she is now able to exhibit an additional list of names, so splendid and extensive as almost to defy repetition, of men who have embodied in her language thoughts and inventions so profound, admirable, and useful, that the philosophy, the science, and the arts of the ancient world sink into comparative insignificance before them.

The classics have become less valuable.

This change of circumstances has altered the relative value of Greek and Latin to the English student. There is now no *knowledge* relating to the physical and moral worlds contained in these languages, which does not exist clearly expressed in English; and there is no mode of feeling or of thought subservient to the practical purposes of life, that may not be as forcibly and elegantly clothed in our native language as in them. Human institutions and practices, however, often long survive the occasions which gave rise to them; and from five to seven of the best years of our lives are still dedicated to the study of the learned languages, as if all their original importance remained.

Our early schools and the classics.

At the time when public schools, such as the High School of Edinburgh and the grammar-schools of the different burghs of Scotland, were instituted, no science existed that could benefit the people. The subjects taught in these seminaries, therefore, were nearly co-extensive with those expounded in the universities. In the primary schools, the pupils were taught the elements of Greek and Latin; and in the colleges, the same studies were prosecuted to the highest point which the time and capacity of the scholar enabled him to reach. In the progress of years, however, arts and sciences have been discovered. In Scotland, the universities have to some extent kept pace with the growing knowledge of the age. In them, lectures are now delivered on the physical sciences, and on most of the branches of medicine. In short, the knowledge of Nature in all her departments is now taught, Greek and Latin constituting only departments of the general system of instruction.

The neglect of practical knowledge in modern schools.

If our primary schools had kept pace with this improvement, all would have been well. If we had followed the spirit of practical wisdom manifested by our ancestors, and extended our elementary instruction in proportion to the enlargement of our university education, the knowledge of the people would have been far superior to what it actually is. But, by a strange anomaly, our primary schools have, till within these few years, been allowed to stand still, while the universities have advanced. These schools have continued to teach little else than English, Greek, and Latin; and the consequences have been baneful. The great mass of the people of the middle and lower ranks, having been taught exclusively at these and the parish schools, have been led to believe languages to be practical knowledge; and they have been defrauded of the opportunity of acquiring elementary instruction in the arts, sciences, and other departments of useful knowledge. They have wasted in studying—or in attempting to study—Greek and Latin, the only time which their pressing occupations left at their command for obtaining information. They have been sent into the world, too, ignorant of the stores of moral and intellectual instruction presented by the works of the Creator.

The higher orders, again, after having spent from five to seven years in what they were led to believe were preparatory studies, have

The neglect of practical knowledge in schools.

entered the universities, and found themselves obliged to commence with the very rudiments of the sciences.

In the great public institutions for the maintenance and education of destitute children, the system of teaching chiefly languages exhibited its fruits in a very tangible form. While children living in the houses of their parents learned something of real life by intercourse with society, perusing newspapers, and observing passing occurrences, those shut up within the walls of public institutions, and excluded from these sources of information, presented at the end of their education a lamentable spectacle of ignorance. I have been informed, by men engaged in practical business who have received apprentices from such institutions, that the boys, on their entrance into active life, appeared as if they had just dropped from the moon. Everything was strange to them; and very little of what had been previously taught to them was applicable, in their new condition, to useful purposes.[1] What I contend for is, that common sense should be employed in selecting studies for the primary schools as well as in the universities; and that, in these seminaries, the elements of useful knowledge, in addition to languages, should be taught.

The effects of too exclusive attention to language:

In surveying, then, the practice of confining education in primary schools chiefly to languages, we observe that the following consequences ensue:

(1.) The intellectual faculties are starved.

First, The intellectual faculties desire *knowledge* as their natural food, and it is only after a considerable stock of ideas has been acquired, and many emotions experienced, that the value of words, as a means of expressing them, can be appreciated. By the common selection of studies, however, little knowledge of *things* is communicated, and children are compelled to proceed at once to learn difficult, copious, and obsolete languages—to burden their memories with words corresponding to which they have no ideas. This course of study being an outrage upon Nature, tedium, disgust, and suffering, invade the youthful mind. As a means of conquering aversion, severe discipline used to be, and occasionally still is, resorted to. This, being felt to be unjust, rouses the lower feelings and debases the higher sentiments, while the intellect is starved and impaired by dealing habitually with sounds to which no clear conceptions are attached.[1]

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[1] The reference is chiefly to the "Hospitals" for children, which form such a feature of Edinburgh education, and of its buildings. See abundant evidence to the truth of the opinion in the text, regarding the effects of their training as it was, and of the system generally, in the First and Second Reports of the Commissioners on the Endowed Schools and Hospitals (Scotland) for 1873–74. Great reforms have lately been effected, chiefly through the enlightened efforts of the Merchant Company of Edinburgh.

(2.) The practical work of life is not prepared for.

Secondly, Under this system, children make no substantial progress in any useful acquirement. Nine out of ten of them drawl away the years of their allotted penance, and within a brief space after its close, forget much of what they had learned with so much labour and pain; and even the tenth, who, from a higher natural talent for languages, perhaps distinguished himself at school, does not, on entering the counting-room or workshop, always find himself as superior to his competitors in practical business as in classical attainments.

If the individual select commerce or manufactures for his occupation for life, the time devoted to the dead languages is, to some extent, misapplied. Nine-tenths of the children educated in a commercial town do not follow professions for which Greek and Latin are indispensable; and hence the time and money expended, by at least this proportion of pupils, might have been better employed. The habits of mental activity and application which they acquire in contending with the difficulties of these languages, constitute the most valuable results of their instruction. To them the languages themselves are of comparative little utility. Professor Christison, when examined some years ago before the Royal Commission which visited the University of Edinburgh,[2] stated, that at the High School he had been dux of the Greek Class, and at the College had gained a prize for skill in that language, and was naturally fond of it; but that, from the time when he began to study medicine, he found his attention so fully occupied by substantial science, that he had scarcely opened a Greek book: while he had been obliged to study French and German for the sake of the medical information to which they were the means of access.[3]

(3.) Personal and relative duties are all unknown.

Thirdly, The season for obtaining real knowledge being dedicated to the study of language, the individual enters on life deficient in many acquirements that would be more substantially useful. He knows nothing about the structure of his own body, and very little about the causes which support it in health, or subject it to disease; he is very imperfectly informed concerning the constitution of his own mind, and the relations established between himself and other beings; he is not instructed in any science; knows nothing of the principles of trade; and is profoundly ignorant of the laws of his country, which he is called on to obey.

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[1] See remarks on intellectual and moral teaching in Part Third, chap. iv. George Combe often speaks, even bitterly, of his school experiences.

[2] This Commission was appointed about 1820. The evidence, though printed, was not published for several years.

[3] In a letter to George Combe in 1833, published in the pamphlet from which the above is taken, Professor Christison emphasises the above opinions, and says that if any other language but Latin were to be required, he should infinitely prefer placing French, and even German too, in the *Statuta* for the degree of M.D. He is also sure that these opinions coincide with those entertained by most qualified judges whom he had conversed with on the subject.

The relation of Classics to a knowledge of English.

It is an error to suppose that Greek and Latin are indispensably necessary to enable a boy to understand his own language. This must be the case only where no adequate pains have been bestowed by teachers to convey fully the meaning of English expressions. All words are mere arbitrary sounds; and, in itself, a sound invented by an Englishman is as capable of being rendered intelligible by proper definition, as one first suggested by a Greek or Roman. A great proportion of the words which compose the English language are derived from the Saxon; yet few persons think a knowledge of that language necessary for the due understanding of their native tongue. The grand requisites to the right use of speech are two,—clear notions and accurate definitions of the words employed to express them. The *former* will be best attained by studying *things* and their relations, and the *latter* by a careful exposition of our mother-tongue, by teachers who know scientifically both the things signified and the genius of the language. The derivation of words is not always an index to their true signification; *artery* means literally air-vessel, yet it circulates blood; Physiology is derived from φυσις, nature, and λογος, discourse,—yet in English it is used to designate only the doctrine of animal and vegetable functions. In teaching etymology, therefore, we must often guard the student against the errors into which it would lead him; so that the difficulty of his understanding his native tongue is, to that extent, increased by his Greek and Latin studies.

Causes of the imperfect knowledge of English.

Various obvious reasons exist why so little of English is understood by those who learn *it* and no other language or science at school. Owing to the deficiency of their own education, teachers themselves, in general, do not possess distinct knowledge of the things signified by the sounds which they communicate; and, from not understanding the ideas, they have it not in their power to define words accurately. Hence they cannot, and do not, bring together before the minds of their pupils, clear conceptions of the things signified, and of the signs, without the combination of which the right use of speech is impracticable. Further, schoolmasters, in general, communicate only the *sounds of words*, and the *abstract* rules of grammar; but this is not teaching *a language*. Teaching a language implies unfolding its structure, idiom, and powers—a task which requires extensive information and much reflection.

A professor of English, therefore, would be more useful to nine out of ten of the pupils of any academy for the education of the industrious classes, than professors of Greek and Latin; and it should be only after English had been taught in this way, or, by some other method, adapted to the human understanding, and without success, that the conclusion should be drawn that it cannot be understood sufficiently for all useful and ornamental purposes, without a previous knowledge of Greek and Latin.

Classics not necessary to understand scientific technicalities.

The extensive study of Greek and Latin by learned men, has led to the practice of compounding many new words out of Greek roots; and as Chemistry, Geology, and other branches of Natural History, are advancing with cheering rapidity, multitudes of purely Greek words are added to our language every year, and the uninitiated suffer great inconvenience from not understanding them. This evil, I believe, is to a great extent unavoidable. The things described are new in science, and new names are needed by which to designate them. Uninstructed readers are unacquainted with the *objects*, as well as with their names. If the objects were studied, which can be done only by observation, no difficulty would be found in comprehending the words, although they be derived from Greek and Latin roots. It would be extremely difficult to give to English terms that scientific precision which is attainable by using names compounded of Greek and Latin roots. Explanatory dictionaries, however, of words, common and scientific, borrowed from these languages, have been published; so that no one is compelled to study ancient tongues for six or seven years, for the sake of understanding the derivations of a few hundreds of scientific terms.

Another language not necessary to know one's own.

It has often been observed that the Greeks themselves studied no language except their own, and yet attained to exquisite delicacy and dexterity in the use of it; and why may not the English rival them in this exploit? The objection, that Greek is a primitive, and English a derivative tongue, is met by the answer, that every word is merely a sound indicative of an idea or an emotion; and that it makes no difference in the possibility of comprehending the meaning of it, whether the sound was invented by the English themselves, or borrowed by them from the Greeks or Romans. In learning the meaning of Greek words, the student must connect the thing signified directly with the expression, because he has no etymology to render the Greek intelligible. But if he can comprehend Greek, by merely connecting the idea with the word, why may he not learn to understand English by a similar process?

Great men ignorant of classics.

It may be added, that some of the most eminent of our English authors, such as Shakespeare, Cobbett, Burns, and a whole host of female writers, had little or no acquaintance with the dead languages; and that there are not wanting instances of learned critics, like Bentley, whose classical knowledge did not enable them to express themselves, in their native tongue, with tolerable correctness, gracefulness, and ease.[1]

Opinions of great writers on the subject.

We have the testimony of several of the greatest masters in English literature against the existing practice.

"It is deplorable," says Cowley in his Essays, "to consider the loss which children make of their time at most schools, employing, or rather casting away, six or seven years in the learning of words only, and that very imperfectly."

Locke, in his "Treatise on Education," asks: "Would not a Chinese, who took notice of our way of breeding, be apt to imagine that all our young gentlemen were designed to be teachers and professors of the dead languages of foreign countries, and not to be men of business in their own?"

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[1] "It would not be difficult to show that, of the most illustrious discoverers, inventors, and improvers in science and the arts, a large majority have been ignorant of Greek and Latin. The following are a few out of many that might be named: Franklin [he was one year at Latin], Rittenhouse, Watt, Arkwright, Hutton, Hubbart, Brindley, Bramah, Leslie, Stevenson, Perkins, and Fulton. To these dozens of others might be added, among them, Buffon, Davy, Cuvier." "Some of the most distinguished orators of modern times have had but a small acquaintance with Greek and Latin. Among the former may be mentioned Chatham, Erskine, and Hamilton; Henry, Whitfield, and two or three Americans now living. Respecting authors, the same is true. Shakspeare was a stranger to the ancient languages, and Molière, Fielding, and Cuvier were in the same condition. So was Franklin, whose style is a model of simplicity, perspicuity, and chasteness; and so was Washington, who wrote with uncommon elegance and power. Humphrey Davy, an excellent writer, and the ablest chemist of his day, had no classical learning. That the style of English authors is far from being perfect in proportion to their knowledge of the dead languages appears from numerous instances. Sir Walter Scott and Sir James Mackintosh were greatly inferior in classical scholarship to many we could name, who could scarcely write grammatical English. Of Jeffrey, Bulwer, Cowper, and Irwin, the same is true. Few men wrote English better, or expressed themselves more vigorously than William Cobett, who was totally unversed in Greek and Latin. The same was true of Thomas Paine, and some of the most correct and most fascinating writers were females, who were also strangers to the ancient classics."—From "Thoughts on the Study of the Greek and Latin Languages," by Dr Caldwell of America, reprinted in this country with his "Physical Education," edited by Robert Cox, with preface by George Combe.

Gibbon the historian remarks, that "a finished scholar may emerge from the head of Westminster or Eton, in total ignorance of the business and conversation of English gentlemen in the latter end of the eighteenth century."

Mr Moore, who cites these authorities in his notices of the "Life of Lord Byron,"[1] adds, that that gifted poet was a miserable Greek and Latin scholar while he attended Harrow School; that he hated the task of learning these languages; and that he acquired his astonishing copiousness, flexibility, and beauty of style, by extensive miscellaneous reading in his native tongue.

Milton says, "Though a linguist should pride himself to have all the tongues that Babel cleft this world into, yet, if he have not studied the *solid things* in them, as well as the words and lexicons, he were nothing so much to be esteemed a learned man as any yeoman or tradesman competently wise in his mother dialect only."[2]

And Dr Adam Smith observes, that "it seldom happens that a man, in any part of his life, derives any conveniency or advantage from some of the most laborious and troublesome parts of his education."[3]

The results o linguistic and real instruction compared:

(1.) As to the knowledge imparted;

Education, then, consisting chiefly of languages, leaves the mind of the pupil ignorant of things, ignorant of men, and ignorant of the constitution of the social system in which he is destined to move. He is trained in abstractions, and among shadows; and when he enters practical life, he finds that his real education is only at its commencement.

Education consisting of a knowledge of philosophy and science, on the contrary, produces an early and a deep conviction that man is made for action; that he is placed among agents, which he must direct, or to which he must accommodate his conduct; that everything in the world is regulated by laws instituted by the Creator; that all objects which exist, animate and inanimate, have received definite qualities and constitutions, and that good arises from their proper, and evil from their improper, application. This education makes known what these qualities are. It invigorates the understanding, and gives boldness and independence to the sentiments.

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[1] Vol. i. p. 89, 90. Murray, 1832.

[2] Tract to Hartlib.

[3] Wealth of Nations, b. v. c. 1.

The practical effect of the two modes of instruction must be widely different.

(2.) As to intellectual displine;

I have heard the practice of teaching the ancient languages as the chief branches of education defended on the ground, that the difficulties which the study of them presents afford an admirable means of training the intellectual faculties to contend with obstacles, and that discipline more than knowledge constitutes the practical value of education. In answer to this argument I observe, that the Creator, in bestowing on us faculties fitted to become acquainted with external nature, and in rendering us happy or miserable in proportion to the extent to which we place ourselves in accordance with his laws, must certainly have adapted these objects to our mental constitution, in such a manner that the study of them, while it carries positive advantages in its train, should also beneficially exercise the faculties themselves, by means of which it is conducted. Accordingly, it appears to me that the power of observation, on the strength and acuteness of which the talent for practical business greatly depends, will be better disciplined by studying the forms, colours, magnitudes, and arrangements, of the different parts of minerals, earths, metals, salts, plants, and animals, than by learning merely the distinctions between modes, tenses, genders, and cases, in two or three obsolete languages; and that the reflecting faculties will be better trained to vigour, by investigating the active phenomena presented by the objects comprehended in the sciences of Chemistry, Natural Philosophy, and Physiology, than by contending with the subtleties of Greek and Roman authors. In the one case, the faculties are employed directly on the objects suited to them in creation; in the other, they are occupied with artificial inventions in one particular department of intellect alone. In the one case, every item of knowledge gained possesses intrinsic value; in the other, the ideas acquired are of slender utility, beyond the discipline which the study of them affords. The study of nature, then, calls into existence a much greater *amount* of *thought* than does the study of languages.

(3.) As the bases of further knowledge;

It has been said also in defence of Greek and Latin as the substance of education, that these languages become the basis on which a vast fabric of useful knowledge may be reared. The pupils, we are told, are instructed in the geography and history, and in the animal and mineral productions, of the countries in which the events recorded in the ancient classics occurred. This, however, is an acknowledgment that these branches of information are valuable in themselves; and then the only remaining question is, whether natural science, history, and geography will be best taught as mere appendages to Greek and Roman literature; or whether they be not entitled to take the lead, on account of their own inherent excellence, and of their superior adaptation to gratify and improve the mental faculties. Those who maintain that they are not, give the preference to the artificial and abstract products of the human intellect in ages when science was scarcely known, over the ever-enduring and perfect works of the Creator, as strengthening studies for the youthful mind!

(4.) As to training the memory and observation;

Again, it is argued by some person, that in studying science, we acquire a knowledge only of the names of alkalies, acids, earths, salts, minerals, plants, and animals, which, after all, is an exercise of mere verbal memory—a species of parrot-practice calculated to puff up the youthful mind with conceit, and is in itself far less useful than a real acquaintance with the principles of universal grammar, and with the literature of two of the greatest nations of antiquity. The fundamental proposition in this argument is at variance with fact. In a proper course of instruction in science, the pupil is never taught the name of any object until he shall have been made acquainted with the object itself.

(5.) As to strengthening the judgment;

And, in regard to strengthening the judgment, it appears to me that an individual who is trained to habits of accurate observation, who learns early, that the objects of creation are agents acting and re-acting on each other and on himself; that they operate according to regular laws; and that man may control, direct, and apply some of them by his own energy and skill, while, to the influence of others, he must accommodate his conduct;—is much better prepared to enter life, with a vigorous and disciplined understanding than one who has spent five, six, or seven years chiefly in studying the abstractions and conquering the difficulties of the Greek and Roman classics.

(6.) As to surmounting difficulties;

It is no doubt useful to train the youthful mind to contend with and surmount difficulties; but these are presented in abundance, and in the most beneficial form, in the study of nature. In exercising the eyes, we would not teach a child to squint, because this is more difficult than looking straight; and in exercising the legs, we would not direct the pupil to walk chiefly on his tiptoes, because this demands greater vigour in the muscles than walking on the full sole of the foot: yet it would be equally rational to do so, as to select the intricacies of Greek and Latin grammar as mental exercises on account of the difficulties which they present to the understanding.

No man seriously engaged in the study of science ever found his path too flowery, or the obstacles to his progress too few. Yet the difficulties which he encounters are stimulating, because the scheme of creation is adapted to the constitution of his understanding. He feels so greatly benefited and so highly delighted with whatever knowledge he has gained, that the labour of adding to his stores, although severe, is pleasant. He is cheered also by the consciousness that his powers of investigation increase in proportion to his attainments and perseverance.

(7.) As to preparing for actual life.

The greatest evils attending a purely classical education appear to me to be the ignorance in which it leaves the pupil of the objects, agents, and relations existing in nature and social life, and the extent to which, in consequence, his mind is exposed to the influence of prejudice and superstition. A thorough education in natural knowledge, on the other hand, enlarges, invigorates, and humanizes the whole mental powers, wherever they possess native aptitude for improvement.[1]

Remarks on Dr Caldwell's opinions.

In a preface to Dr Caldwell's "Thoughts on the Study of the Greek and Latin Languages," George Combe says: "Dr Caldwell discusses the subject in a masterly style. The grand question is whether the works of nature, proceeding directly from the Creator and adapted by Him to the human faculties; or two dead languages, Greek and Latin, artificial inventions at the first, and long disused by all living nations, form the better objects for stimulating, strengthening, and enlightening the intellectual powers, and for humanizing the feelings of the young. Dr Caldwell takes the side of Nature and defends her claims with much eloquence, energy, and learning. He does not, however, absolutely exclude Greek and Latin from the list of profitable studies; his whole aim is to destroy that absurd and superstitious reverence for these languages which substitutes them for science, and wastes the precious years of youth in acquiring a knowledge of mere words and abstractions in prosody and grammar, instead of becoming acquainted with creation. To those individuals who have a taste for languages, and have leisure to embrace them in their studies, no object probably can be more interesting and attractive than Greek and Roman literature to this class of students Dr Caldwell proposes to leave all their enjoyments unimpaired."[1]

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[1] Lectures on Popular Education, p. 10; and "Observations on Education" (in *Phrenological Journal*, vol. iv. for 1826–7, p. 407), which were submitted to the Town Council of Edinburgh, in prospect of the building of the present High School, founded in 1825, and opened in 1829.

The effects on civilisation of linguistic and of real studies compared.

I ask, Whether has our civilisation been most indebted to the diffusion, by means of the printing press among all classes of the people, of discoveries in natural science and their applications in art, or of theology and metaphysics, and of Greek and Latin, their congeners?

Theology and metaphysics have stood nearly still during the rapid advance of natural science, and I should be glad to be instructed in examples of their applications to the arts and conveniences of life, on which our temporal well-being depends. Do not suppose that I call in question the importance of theology in reference to things spiritual, or of metaphysics, Greek, and Latin as exercises for the understanding of scholars and of men of leisure and refinement. Let us grant this in the most extensive terms that their votaries could desire; but let us not, by this concession, be led away from the practical question before us, namely, whether physical science and its applications to the arts—in other words, a knowledge of God's works and of the laws of their action and their relation to man,—or languages and theology are the things *most* needed (if the one *must* exclude the other) in our primary schools, as means by which the working classes may be raised from their present state of abasement, and be enabled to play that part in private and social life which becomes them as moral, religious and intellectual beings. Has it not been the development of man's mental faculties and their application to the physical creation, continued through successive ages, that has been the chief cause of our past civilisation? And how have these mental faculties been thus enlarged and invigorated? By man's studying the qualities of the external world, by judging of the capabilities of material objects, and by applying them to use.

The function of language in relation to things.

This remark is so trite that I am almost ashamed to make it, but it is of fundamental importance towards the right understanding of the subject of education. It embraces the axiom that "Knowledge is power," and gives it a practical direction. This axiom has been repeated almost *usque ad nauseam*, and is constantly in the mouths of many excellent persons who obstruct instead of forwarding the progress of civilisation. Is knowledge of the Gaelic language power? Yes, it is power to read, speak, and write Gaelic, and this may be very useful to a traveller who, on a dark night, has lost his way among the wilds of Glengarry, and comes to a lonely cottage in which no other tongue is spoken. But is it useful towards building a house, towards making a coat, or ploughing a field?[1] Certainly not, because many of the Highlanders who speak it can do none of these things. For these purposes, it is of small utility. Will a knowledge of Greek, Latin, Hebrew, Arabic, Chaldee, or Cherokee enable you to construct a power-loom, to form a railroad, to paint a picture, or to model a statue? No; millions of the people who spoke these languages could not boast of such attainments.

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[1] See Caldwell's "Thoughts on Physical Education, and on the Study of Greek and Latin," &c., edited by Robert Cox, with preface by George Combe (Maclachlan and Stewart, Edinburgh), published in this country in 1836.

The knowledge necessary for progress in civilisation.

This is not the kind of knowledge, therefore, by means of which the descendants of the ancient Britons converted the forests in which they roamed into the teaming fields and the life-pervaded cities which we behold. It was knowledge of the existence and qualities of iron, of stone, timber, lime, clay and coal; of corn, edible roots, and cattle—in short, of the mineral, vegetable, and animal productions of the earth—that gave them the power which has produced this mighty metamorphosis. It was by dealing with these realities, by putting forth their ingenuity in applying them, by practising patience and industry in this task, that their mental faculties grew, not only in acquired knowledge, but in vigour and activity. Their brains became larger. In proportion as their knowledge increased, their language was augmented by the addition of words to express their new ideas and emotions.

A knowledge of words does not imply that of things.

But it is an unphilosophical error to imagine that a knowledge of words is equivalent to, or necessarily implies, or even necessarily leads to, a knowledge of things. For half a century, the Scottish Highlanders were taught to read English, without being taught what the English words meant in Gaelic. The clergy apparently assumed that words conveyed their own meaning, and it was left to the late Sir George S. Mackenzie,[2] about twenty-five years ago, to demonstrate to them the fact that words are mere sounds, meaning nothing while unconnected with knowledge of the things they were invented to express. At a public examination, he showed the assembled wisdom of a Highland parish, that the children did not understand one word of the English which they had so fluently read, for the simple reason that they had never been taught what the words meant in Gaelic.

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[1] That is, of course, knowledge of the language *per se*, and simply as a language.

[2] Sir George S. Mackenzie of Coull, near Strathpeffer, Ross, the first President of the Edinburgh Phrenological Society, a frequent contributor to the *Phrenological Journal*, and an extensive author on Phrenology. George Combe and he were intimate, and it was during a visit to Coull that George Combe witnessed the above, to which he refers more than once.

The good effects of the study of classics.

Greek and Latin, like all other languages, are, in this respect, no better substitutes for the knowledge of things than Gaelic. They are elegant studies, tending to exercise and improve the gift of expression and literary taste, and they are useful in strengthening the intellectual faculties, and affording high gratification to those capable of appreciating their numberless beauties; they also in past times served, and do still in some measure continue to serve, as the means of recording and diffusing the knowledge which man has attained.

These compared with those from the study of things.

But to our knowledge of nature, and her powers and adaptations, in addition to the use of language, must be ascribed the real development of our mental energies, and our progress in civilisation. And not only so, but in reference to educational utility, I think you will find, that instruction in the natural sciences and their applications to practical purposes tends still more strongly than classical studies do to strengthen and expand the intellect, and elevate and refine the moral sentiments, with this great additional advantage, that it is directly calculated to promote the well-being of the individual and of society.

Language the effect of knowledge, not the cause.

Let me, however, not be misunderstood. Language also *is* indispensable to human advancement; but a rich vocabulary is not the cause, but the effect of extensive knowledge in the people who have formed it. In communicating our acquirements to the young, we must necessarily impart to them a knowledge of the words by which they are expressed.[1]

The proper age for teaching the classics.

The study of Greek and Latin, instead of commencing at seven or eight, might be postponed till eleven or twelve years of age. From the higher development of the intellectual faculties at eleven or twelve, as much progress would be made in these languages in two or three years at that age, as in five or six commencing at the age of seven;

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[1] Lecture "On the Comparative Influence of the Natural Sciences and the Shorter Catechism," delivered in 1851.

so that, even with these languages in view, no time would be lost. Many pupils whose professions cannot be determined at seven or eight, and who, under the present system, begin the study of the dead languages at these ages, merely to prepare for contingencies, would avoid them altogether, by being fixed determinately at eleven or twelve on a pursuit that did not require them.[1]

The studies proper for early years.

The intermediate years between seven and eleven or twelve might be employed in studying geography, drawing, natural history, biography, the history of foreign countries, with their productions, natural and artificial, their trade, moneys, mode of transacting business, &c.; and even a considerable portion of the elements of physical science might be made intelligible in the later years of the above period. This kind of instruction would forcibly exercise and excite the observing and reflecting faculties of children, and train their minds, just as gymnastic evolutions do their bodies, for higher exertions of activity and energy in after life. Under the present system, all children who ultimately abandon the learned professions, find themselves cheated, as it were, out of the intermediate years of their lives between seven and twelve, and discover, when too late, that instruction in words is not knowledge, and that they have endured suffering in pursuing a phantom, while they might have enjoyed pleasure in attaining a substance.[2]

[Since the beginning of the present century, the study of Classics has gradually but certainly declined in this country, as well as else-

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[1] This is an important question, claiming greater attention than it has yet received. See the same idea of postponing the teaching of the classics well advocated by Professor Hodgson, in the *Westminster Review* for October 1853, and other authorities there quoted; also James Simpson's "Philosophy of Education." The great classic, George Long, is also of opinion that the study of the ancient language is generally commenced too soon, ("On the Study of the Latin and Greek Languages," 1830). The subject was recently brought before the Endowed School Commissioners for Scotland, in 1873, by Professor Hodgson. See his evidence on this point, in their First Report, p. 76, in which he says, "I was in the High School when I was seven years old, and I was thoroughly proficient in the Latin grammar,—that is to say, I could repeat it by rote without understanding it,—by the time I was eight; but I have mourned bitterly over that ever since, and I should like to save my countrymen from a repetition of the same fate."

[2] Observations on Education," *Phrenological Journal*, vol. iv. p. 407, (for written on the erection of the present High School of Edinburgh.

The decline of classics at the beginning of the century.

where. Various causes have contributed to this, of which these are notably apparent,—the growth of modern thought and scientific discovery, these languages long ceasing to be required as mediums of communication between the learned and for the acquisition of knowledge, the development of the mother tongue as a literary instrument, the growth of the native literature the rise and rapid progress of the newspaper press, the impetus given to the acquisition of useful and scientific knowledge by the wonderful advances in scientific discovery and the needs of modern life, the popularising of science in various ways, and, not least, the imperfect teaching of the classics at the time when the agitation against them began. In addition to these causes, the educational regeneration which dawned with the century was no doubt a direct and powerful means of directing attention to this scholastic subject, as to all others. All these and other causes combined gave rise to eager questioning in regard to the utility of these ancient tongues, their usurpation of the greater part, and, in some cases, of the whole field of liberal education, and the manner of their teaching. This was no doubt increased by Mr Edgeworth's attack on the abuse of classical learning, in his work on "Professional Education," in 1809, and Sydney Smith's sparkling review of it,[1] in the same year, which brought the subject prominently before the country. After that time, discussion on it rapidly increased, both for and against the classics, and it was evident that the absolute rule of these ancient tongues in schools was gone for ever, and that their true subordinate position, in an educational course for our children, was being gradually and more clearly recognised.

George Combe's part in the struggle.

Between 1820 and 1830, George Combe and his friends did a great deal to promote the modern view, by pointing out and explaining the nature and place of linguistic studies, on rational grounds based on the philosophy of mind, and by advocating Real education, which is, as George Combe puts it, the "knowledge of things and relations,"[2]

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[1] In the *Edinburgh Review*, of 1809, under the title of "Too much Latin and Greek," in which he compliments Mr Edgeworth for "the courage with which he had combated the excessive abuse of classical learning."

[2] *Phrenological Journal*, vol. iv., 1826-7, p. 407. The subject was well discussed by Dr Poole in his "Essay on Education," based on Phrenology, originally contributed to the *Encyclopædia Edinensis* in 1819, and published separately in 1825; by Dr Spurzheim in his "View of the Elementary Principles of Education," published in 1821; and by many other writers in the *Phrenological Journal*, in which it formed one of the chief subjects, such as George and Andrew Combe, James Simpson, Sir G. S. Mackenzie, and many more.

The foundation of the Edinburgh Academy and the present High School.

as contra-distinguished from words. In order to prevent the growing decline of classical learning in Edinburgh, an effort to erect a new classical school, begun by Henry Cockburn and Leonard Horner, resulted in the founding of the "Edinburgh Academy," which was opened with great eclat, by Sir Walter Scott, in 1824.[1]

In January 1825, the foundation of the present High School was laid in place of the old school in Infirmary Street, and a committee of the Town Council was appointed to see certain schools, to enquire as to the best principles on which it should be conducted, visiting, amongst others, the well-known Wood's Sessional School, of which they gave, in 1827, an "able and interesting report." On this report, George Combe wrote certain "Observations" as to the true principles on which an academy should be founded and taught, in May 1827, which appeared in the *Phrenological Journal* that year, and of which the foregoing chapter is, in great part, a reproduction.[2] These observations combined his views of classical *v.* real education, and a pretty full exposition of the course of instruction he advocated, which appears in Part Second of this work. The High School was opened in June 1829, but the curriculum does not seem to have been greatly affected by George Combe's suggestions.

The controversy ncreases.

At the end of 1828, a series of articles appeared in the *Scotsman*, written by the editor, Charles Maclaren, containing "Suggestions for the Improvement of Popular Education,"[3] with views almost coincident with those of George Combe, temperately, fully, and practically discussed, which still kept the subject before the public mind.

The classical war was waged yet more fiercely between 1830 and 1840, when George Combe delivered and published his lectures on education before the Philosophical Association of Edinburgh, and elsewhere, in 1833, as told in the Introduction; and James Simpson advocated the same views, in lectures all over the country, and in his "Philosophy of Education," issued in 1834. The other side of the question was as warmly espoused by many speakers and writers, frequently with little else than natural indignation against the benighted innovators, but not seldom in temperate, well-put argument, as by Professor Pillans, who published three lectures on the subject in 1836.[1] The contest was exceedingly keen, if not more. As Andrew Combe says,[2] the High School and the Academy at that time "devoted their whole time to droning over Latin and Greek. The public demanded an addition of useful knowledge, and a restriction of the time dedicated to classics, particularly for the hundreds destined for commerce and trade, and not for professions. In the *Phrenological Journal* and in my brother's lectures, we loudly called for reform. They resisted all change."

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[1] See Lord Cockburn's "Memorials of his Times," p. 414.

[2] The article is called "Observations on Education, submitted to a Committee of the Town Council of ————, appointed to collect information preparatory to the erection of a New Academy." The most of the article was afterwards incorporated into his course of three lectures on Education before the Edinburgh Philosophical Association in 1833, which were afterwards published as a pamphlet under the title of "Popular Education," and from which the foregoing chapter is chiefly reprinted.

[3] Contained in his "Select Writings," edited by Robert Cox and Professor Nicol, Vol. I. (Edinburgh: Edmonston & Douglas, 1869.)

The teaching of modern subjects begins; and its effects.

In order to prove the possibility and wisdom of combining classics with modern subjects, as French, German, history, drawing, natural history, and chemistry, a new school was opened, called the "Hill Street Academy," and afterwards the "Edinburgh Institution," under the care of a very able man, the Rev. Robert Cunningham.[3] "This school succeeded from the first," says Dr Combe, "and with two hours a day devoted to Latin and Greek, sent out equally good classical scholars as its rivals, and with more vigorous minds, from their expansion on other subjects. The High School fell from 750 to less than 400, and the Academy in rather less proportion. The masters raged against my brother and the phrenological crew, and declared the public under a delusion." The same took place in Glasgow High School. The

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[1] On "The Relative Importance of Classical Training in the Education of Youth," first delivered in the Humanity Class room, in Edinburgh University, in 1835; contained in his "Contributions to Education" (Longmans).

[2] See "Life of Andrew Combe," p. 325.

[3] He had formerly been Governor of George Watson's Hospital, Edinburgh. He was obliged, on account of ill health, induced by over-exertion, to leave Edinburgh, when he devoted himself to the study of education, especially the Normal School system, in Prussia, France, and Switzerland, and travelled in the United States for the same purpose, where he was appointed Professor of Modern Languages in Lafayette College, Pennsylvania. He remained there two years, and, being disappointed in the results of his educational advocacy, returned to Scotland, where he became the able Rector of Mr Stow's Normal School, then recently built. He would seem to have been altogether an accomplished man, and an advanced educationist. For some account of him, see George Combe's "America," vol. iii. pp. 106 and 433, and "Memoir of David Stow," by the Rev. Wm. Fraser (Nisbet, London.) The Edinburgh Institution still flourishes in Queen Street, under Dr Ferguson. See remarks on its foundation and purpose, in the First Report of the Endowed Schools Commission for Scotland (1873), p. 171.

Universities also felt a similar result of the anti-classical feeling of the time.[1]

Lord Cockburn's opinions on the subject.

Lord Cockburn bears witness to the same effect, noting, in 1834, that "the tide was setting strongly against classical education," and that making other subjects subordinate to Latin and Greek was "enough to sink" the High School and the Academy. "Meanwhile," he says, "other establishments, both public and private, are springing up, which, as yet, have in general succeeded, chiefly, as it appears to me, because they disdain these two languages [which was not the case in all, as we have seen], and profess to teach what they call useful knowledge, which means modern languages, chemistry, civil and natural history, physiology, astronomy, navigation, and, in Edinburgh, phrenology. All this, and everything else, is not only capable, it seems, of being taught to children, but it is peculiarly easy to them." "Absurd," he continues, "as all this is, it will probably go on, and I should not wonder if, amidst other eras, we are on the verge of one which will consist in making the languages of Greece and Rome not the staple of our schools." Though ardently pro-classical, as was natural in the founder of the Academy, he admits that "there is some reason for it. They have been our staple *too exclusively*. There is no answer to the question put by those who ask, why *all* boys should be *obliged* to spend *several years* in *attempting* to learn two dead languages, for which they have no *practical* use? And this pith of their case has been gradually receiving strength from other circumstances. People will never long sustain the restraint of a foreign language, without necessity." This is beautifully candid and far-seeing. Lord Cockburn also, with clear perception, notes one great cause of the decline of classics. "Pedagogues, instead of keeping them by connecting them with things of practical usefulness, testified their allegiance to the cause of their own importance, by a more rigid exclusion of all modern abominations. The dead languages being thus separated from practical education, in rolled the tide of popular knowledge. The old schools, and what was less improvable, the old schoolmasters, could not educate the people in what they wanted." As Lord Cockburn rightly concludes, "the result of all this was that the old spell, which made the classics and learning synonymous, was

A new anti-classical era begun.

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[1] A well-informed friend writes:—"It was said to me by the late Professor Cruickshank of Marischal College, Aberdeen, that the agitation against Classical Learning in the Thirties was the immediate cause of the low wave of attendance in all the Universities for a number of years."

broken,"[1] once and for ever. A great improvement then took place in consequence, in the classical schools all over the country, especially in Scotland, both in their curriculum of studies and the manner of teaching. As George Combe, writing in 1850, says:—

Improvements in the studies of the High School.

"The High School is improved. Its radical defect, however, is its want of a sound and self-consistent organism of some kind or other. It was originally a Latin Grammar School, and in compliance with the demands of the age, other subjects have been added —not interwoven into the system, but superadded, like patches on an old garment. Thus the study of Greek, arithmetic, mathematics, writing, German, French, and physical science, and the practice of gymnastics have been introduced[2]; but instead of being arranged as integral parts of the system of instruction, the prosecution or omission of each is left to the discretion of the pupils or their parents, who, in many instances, are ill-qualified to judge of the importance of the different elements of education.

"A thorough reform of the system seems hopeless, until a great advance shall have been made in public intelligence on the subject of education; meantime, such improvements have been introduced, under the direction of Dr Schmitz, as the existing arrangements will allow, Latin and Greek are still the principal subjects of instruction; but they are taught not so much with a view to form critical scholars, as to train the young men to habits of correct and independent thinking. The pupils are encouraged, not to take anything cognizable of observation and reason on trust, but to inquire into every subject, and, without looking to the right or to the left, to adhere to that which recommends itself to their minds as good, right, or true. Dr Schmitz has introduced into his own classes the study of the historical development, and of the philosophical principles and laws of the English language, accompanied by practical exercises and essays on this important subject.

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[1] Journal of Henry Cockburn, vol. i., p. 69.

[2] The High School of Edinburgh seems to have been more backward in introducing modern subjects than most of the Scotch grammar schools, the lesser schools throughout the country going far in advance of the greater in this respect. Geography was first taught about 1715; Greek was opposed in 1772, even by Robertson the historian, though taught in Aberdeen before 1553; French in 1834; German in 1845; and an English master was not appointed till 1866. English has been taught in the Glasgow and Aberdeen Grammar schools only since 1834. See Steven's "History of the High School of Edinburgh," of which a short *résumé* is given in the "Report of the Commissioners on the High and Middle Class Schools in Scotland," 1868. See also Grant's "History of the Burgh and Parish Schools of Scotland" for very interesting details regarding the progress of school studies.

The defects in its reform.

"The patrons have likewise introduced the study of the elements of science; but instead of incorporating it as an essential part of the curriculum of the school, and appointing a competent master to teach it, they have engaged two unconnected lecturers, one of whom lectures only for an hour in the week. This is a very imperfect arrangement, for the time devoted to science is too limited; and, moreover, lectures, even accompanied by examinations, are not the mode of instruction suited to young minds. The teacher should come down to the capacity of his pupils, and put himself in as close a contact as possible with their faculties. This can be accomplished, only by his resorting to the most familiar expositions of the truths he desires to communicate, and, as it were, entering into familiar conversation with them."[1]

Its present curriculum of studies.

George Combe gives high and well-merited praise to Dr Schmitz for his efforts to broaden and improve the instruction in the High School, by seeking to secure "a curriculum calculated to place it in harmony with the real wants of the age."[2] Since that time, the High School has gone still further in the line of progress, and under the present distinguished rector, Dr Donaldson, who was appointed in 1865, and his able coadjutors, it is in rapport with the time, combining, as it does, classical and modern or commercial sides, with a wide range of general and scientific teaching. It would no doubt have gratified George Combe, after all his efforts to improve the school in which he was himself taught, to have read the following extract from the report of the Town Council of 1866, in view of his failure with that of 1827, of the principles laid down for the management of the school:—"Every department of knowledge fitted for training the mind should be used in the school for that purpose, and, therefore, the natural sciences should be employed to educate. In harmony with this principle, botany, zoology, natural philosophy, chemistry, and physiology will be made auxiliary to forming the mind. The utmost care will be taken to prevent these classes from falling into mere general knowledge classes. They will be used to bring out those powers of the mind, such as observation and reasoning, by induction, which the natural sciences are best calculated to foster."[3]

A similar advance has taken place all over Scotland in the spirit and practice of education in the older classical schools, and more or

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[1] Life of Andrew Combe, p. 327. [2] *Ibid.*, p. 329.

[3] See Report of Commissioners for 1868, vol. ii., p. 206.

The present state of the question.

less in all schools. Much still, however, remains to be done in Scotland, but more in England, for in both "the ancient spirit is not dead." This has been abundantly proved by the recent utterances at the meeting of the Social Science Association in Aberdeen,[1] and in not a few School Boards and scholastic associations, on the very problems that engaged attention at the beginning of the century: as to the relation between the teaching of words and things, and between classics, mathematics, and science, the educative value of each, and the proportionate attention that should be given to them; and, in regard to language itself, the relative utility and training power of the ancient languages, as compared with the modern, and especially, in general and professional education, with English. These questions still wait final adjustment. Happily, however, we now possess much more abundant and valuable materials than before, for coming to a wise and just conclusion; and it is earnestly to be hoped that the conclusion arrived at will be one based on the true philosophy of education, which, while preparing our children by a wise utilitarianism for the efficient discharge of all the duties of life in every sphere, shall secure a broad and generous culture of all their faculties.[2]—*Edit.*]

[1] In September 1877.

[2] For discussions on both sides of this subject, in addition to those already mentioned, see, amongst a host of works:—"Essays on a Liberal Education," edited by Rev. F. W. Farrar (Macmillan and Co.); "Education," by Herbert Spencer (Williams and Norgate); "Thoughts on the study of the Greek and Latin Languages, by Dr Charles Caldwell of America, included in the volume called "Thoughts on Physical Education," edited by Robert Cox, with preface by George Combe (Maclachlan and Stewart, Edinburgh); "Contributions to the Cause of Education," by Professor Pillans, criticised by Professor Hodgson, in "Classical Instruction, its Use and Abuse," in the *Westminster Review* for October 1853; "Classical Instruction; Why? When? For Whom?" by Professor Hodgson, *Educational Times* for June 1866; "Modern Culture, its True Aims and Requirements," edited by Dr Youmans (Macmillan and Co.); Marcel's "Language as a means of Mental Culture" (2 vols., London 1853); "Oxford Reform and Oxford Professors," by Professor Vaughan (1854); J. W. Donaldson's "Classical Scholarship and Classical Learning" (1856); Rev. R. H. Quick's "Essays on Educational Reformers" (Longmans, 1848). See Henry Barnard's "Studies and Conduct" (Hartford, U.S., 1873), in which are given, in full, the opinions of Byron, Chatham, Donaldson, De Quincey, Froude, Gladstone, Herschel, Hodgson, Locke, Lowe, Macaulay, Martineau, Mill, Milton, Niebuhr, Southey, Temple, Tyndall, Vaughan, Whewell. See also the "Cyclopædia of Education" on Classical Studies (s. v.), by Kiddle and Schem (New York: E. Steiger; London: Sampson, Low & Co.).

CHAPTER III

ON INSTRUCTION IN MAN'S PHYSICAL CONSTITUTION: PHYSIOLOGY AND ITS APPLICATIONS.

Man ought to know himself;

THE *object* of education is to attain to happiness.

This can be attained only when all the faculties of body and mind are applied in their due spheres of action, and exercised *in just proportion* to each other.

To discover what arrangements require to be made, and what pursuits to be followed, to arrive at this due exercise of the different powers of man, we must become acquainted with man himself, with the elements of which he is composed, with their uses, and their relations to each other and external nature. Reading and writing are the means of acquiring knowledge and recording it.

As to his bodily structure and functions.

The next step ought to be, to communicate a knowledge of the structure and functions of the body. Children delight in this, and take up the ideas very rapidly.

The leading idea to be kept in view is to teach their practical application. The opposite error is, to avoid rendering the subjects taught objects of mere wonder and curiosity. The intellect is exercised by the knowledge; but the sentiments must be excited, to produce pleasure and practical conduct. The description of the lungs and their curious structure, the vast extent of surface presented by the cells which contain air and by the vessels which contain blood, the necessity of these to life, and so on, will interest Wonder and Ideality. The reference of the whole to God will excite Veneration. Other details interest Benevolence, Cautiousness for self-preservation, and gratify also Self-Esteem, for they give a consciousness of increased power to avoid evil and do good, resulting directly from knowledge.

This knowledge would delight children from this entertainment. It would send them into society with a vast store of principles, the operation of which would be continually forced upon their attention by the occurrences of life; it would prevent the formation of a host of prejudices; and create a rational perception of the principles on which the Creator permits health and disease, and give love for His character and reliance on His laws. It would keep before the mind the necessity of attending to the physical condition of man, as a means of arriving at his moral improvement.[1]

Physiology as a branch o school instruction.

In one respect, Physiology may be said to be a science only in its infancy, and in another, to be already so far advanced as to be capable of valuable practical applications. This apparent paradox admits of an easy solution.

The most learned physiologists are still in a state of profound ignorance concerning the intimate processes carried on in the tissues of the human body, which produce the phenomena of life. This knowledge, nevertheless, is indispensable to raise Medicine to the dignity of an exact science; and, as it has not yet been attained, some persons represent the healing art as one of a purely empirical character; and Physiology, on which it professes to be founded, as at present a chaos of conjectures.

But, on the other hand, it is undeniable that much is known concerning the structure, functions, and conditions of health of the vital organs, as well as concerning many of the causes of their abnormal action; and on this knowledge, medical practitioners found a treatment of disease that is at once rational and beneficial. But the same knowledge is available for the preservation of health, and for the advancement of social well-being in other departments of life, and, on this account, it may be made an important branch of instruction in Common schools.

A few elucidations will suffice to show the manner in which it has been successfully taught in some seminaries, to children and young persons, of ten years of age and upwards, and also the applications to practical conduct of which it is susceptible.

To be taught, not by lectures, but lessons.

To prevent misapprehension, I beg to state that I do not recommend Physiology to be taught in Common schools in the form of lectures, but in that of lessons, in which the children themselves shall take a part, and in which there shall be a constant interchange of remarks, question, answer, and inference, between the pupils and their instructor. Moreover, in these lessons, no attempt should be made to teach the science or practice of Medicine.

In an ordinary Medical education, instruction is given in the following branches :—

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[1] From MSS.

What is not to be taught.

1*st*, Anatomy, or the structure of the human body.—The teaching under this head embraces descriptions of every bone, muscle, nerve, and viscus in the body, with their attachments and connections, so minute that the student may know how to discover their position, and how to recognise abnormal changes in them in living subjects, with a view to medical treatment, or, if necessary, to operate on them.

I do *not* recommend teaching at all approaching to this in detail, nor with a view to these objects.

2*dly*, Physiology, or a scientific description of the *functions* of every cell, tissue, bone, nerve, muscle, and viscus in the system, according to the profoundest views of the most recent investigators.

I do *not* recommend teaching Physiology in this manner.

3*dly*, *Pathology*, or the *diseased structure* of every cell, tissue, bone, and viscus of the body.

I do *not* recommend this instruction to be given.

4*thly*, The *Practice of Physic*, or the application of all the foregoing branches of knowledge to the diagnosis and cure of disease.

This is *not* recommended to be introduced.

This statement of *negatives* is made because medical men in general, to whom the directors of schools naturally look for advice, have these modes of instruction in their minds (few of them having seen any other in operation) when they deliver opinions on the propriety of introducing Physiology into schools.

The kind of instruction recommended.

The kind of instruction recommended, and which has already been successfully taught in some seminaries, may now be mentioned. The plan of it is this:—A description of the various organs of the human body on which health and life depend, is given in simple and popular language, but scientifically correct, so as to avoid sowing error in the mind of the pupils; the use or function of the part is described in the same manner, the exposition being plain and popular in language, but in principle sound and scientific, challenging the criticism of the highest medical investigators. The influence of the different organs on each other is then explained; and the knowledge thus communicated, of the structure, functions, and relations, is applied to elucidate the natural conditions, on which the healthy and unhealthy action of each vital organ depends: in other words, the causes of good or bad health, and the means that should be used in our daily habits to secure the one and avoid the other The practical application of this knowledge lies, in a greater or less degree, within the power of every intelligent person, and much disease and suffering in ordinary life may be avoided, and much substantial enjoyment gained, by acting on it.

The use of diagrams and preparations.

The instruction concerning the use of each organ is founded on its structure and its relations to the other organs; and the structure is described in words, and, as far as possible, illustrated by preparations and by diagrams. It is generally acknowledged, that not children only, but adults also, more easily and distinctly comprehend and longer remember an object, after having seen it, and heard it at the same time clearly described, than by merely reading about it. Now, the object in introducing the human skeleton and diagrams of the muscles, lungs, heart, and blood-vessels, and other vital organs, into schools, and giving *viva voce* descriptions of them, is to do effectually what a book is capable of accomplishing only imperfectly—namely, to convey to the pupils correct ideas of the structure, so extensive as to serve as a solid basis for understanding the uses or functions of the parts, and the influence of the vital organs on each other and on the whole corporeal system; in other words, to understand the natural conditions on which health depends, and the causes which produce disease.

We should expound the Laws of Health.

The use or function is far better understood when founded on a demonstration of the structure, than when communicated merely by verbal description as a general and unsupported fact. Actual knowledge of the structure and functions renders the relations of the vital organs to each other intelligible, and their reciprocal influence highly interesting. For example, it enables us to comprehend the influence of the digestive organs on the power and activity of the muscles, lungs, and brain; the influence of the brain over the heart, the lungs, and the stomach; the influence of the circulating fluids in forming, supporting, and repairing the waste of all the organs; and so forth. And, as already remarked, this knowledge of the structure, functions, and relations of the vital organs all combined, lays the foundation for a clear exposition of the Laws of Health, by teaching which, we point out the course of action which every individual should habitually observe, in order to promote his usefulness and prolong his enjoyment of life.

What should be omitted in this instruction.

The sexual organs and functions are omitted in the lessons and diagrams, and it is not found that this omission materially affects the practical value of the instruction given; for these being organs of reproduction, their functions do not directly involve the life of the individual, as those of the vital organs, such as the heart, lungs, stomach, brain, and intestines do. Moreover, the same laws of health which govern the vital organs hold good in the case of the organs of reproduction, and, in so far, the instruction given is indirectly applicable to them.

As already observed, the instruction given is sound and scientific in its basis and character, although limited in extent and popular in expression.

This is the kind of instruction which has been introduced with advantage into several schools[1] and a few reasons may be offered why it should be generally adopted.

The need for such teaching proved by the statistics: (1.) Of the Registrar-General.

The deaths that occur throughout England and Wales, and also the causes of them, and the ages of those who die, are reported to the Registrar-General, and by him classified and reduced into tables, which, accompanied by his commentaries, are annually presented to Parliament and published. Soon after this regulation was introduced, it was discovered that there were great differences in the rates of mortality in different districts. The excess of death in some localities amounting to 10, 20, 30, and even 40 per cent. over the number of deaths in other situations, among the same number of people, of the same ages, attracted attention; the causes of the excess were investigated, and found, in many instances, to be avoidable or removable, by application of the natural means of health.

(2.) Of the Sanitary Commissions.

A Sanitary Commission was appointed by Parliament[2] to apply these means, which consist of draining, removing nuisances, ventilating houses, supplying warmth, inducing habits of cleanliness and temperance, and so forth, among the people. This Commission made extensive investigations, and published valuable reports, which were printed by Parliament for general instruction. The burden of these reports, year after year, was that their best efforts were obstructed, and often rendered nugatory, by the prevalent ignorance, among all classes, of the natural conditions of health, in consequence of which, the advantages of the sanitary measures recommended were neither understood nor appreciated; and even where there was a desire among the people to carry them into effect, their ignorance acted as a formidable obstacle to their doing so.

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[1] See end of this chapter for an enumeration of the efforts at introducing Physiology into Schools. Before the date of the publication of this paper, in 1857, the subject had been taught in Lovett's National Hall School in Holborn, since 1848; the Williams School in Edinburgh, since 1848; the Birkbeck Schools, since 1850; the Glasgow Secular Schools, since 1850; Watson's Institution, Edinburgh, in 1854; Heriot's Hospital, Edinburgh, by Dr Hodgson, in 1855; in Edinburgh High School, by the same, in 1856; and by George Combe, in lessons given in Edinburgh in 1848–9 and 1854, and at Charlton Marshal, in Dorset, and Holywood, near Belfast, in 1857.

[2] A Commission was appointed, after the passing of the Poor Law Act, in 1834, which reported "On the Sanitary Condition of the Labouring Population of Great Britain" in 1842. A Health of Towns Commission reported twice, in 1844 and 1845; and a Metropolitan Sanitary Commission, in 1847 and 1848. The Public Health and the Nuisances Acts were passed in 1848. The chief mover in this important subject was Edwin Chadwick, the veteran sanitarian and educationist. In 1858, a Public Health Department was established in the Privy Council, and yearly reports have been issued. See the subject of Sanitary Science very well treated in Chambers' Encyclopædia, Supplement.

Government therefore urged to promote it.

The Government were informed that the best method of removing this obstruction was, if possible, to instruct the people generally in the natural conditions of health and disease, by teaching them so much of the structure of their own bodies as might enable them to understand the functions of the vital organs, and the influence of damp, dirt, foul air, miasma, intemperance, and other causes, which obviously produced the excess of disease and death. Moreover, the Government were convinced of the great importance of introducing Physiology into juvenile schools, and had even taken steps to do so; when, with a view to strengthen their hands, and those of every one interested in improving the sanitary state of the people, the following document was drawn up, and subscribed by sixty-five of the leading physicians and surgeons of London, including the principal teachers of Anatomy and Physiology, and the Practice of Medicine and Surgery, in the metropolis, and also all the medical officers of the Royal Household.

Distinguished medical opinion in its favour.

"Medical Opinion on the importance of teaching Physiology and the Laws of Health in Common Schools.

"Our opinion having been requested as to the advantage of making the Elements of Human Physiology, or a general Knowledge of the Laws of Health, a part of the education of youth, we, the undersigned, have no hesitation in giving it strongly in the affirmative. We are satisfied that much of the sickness from which the working-classes at present suffer might be avoided; and we know that the best-directed efforts to benefit them by medical treatment are often greatly impeded, and sometimes entirely frustrated, by their ignorance and their neglect of the conditions upon which health necessarily depends. We are therefore of opinion that it would greatly tend to prevent sickness, and to promote soundness of body and mind, were the elements of Physiology, in its application to the preservation of health, made a part of general education; and we are convinced that such instruction may be rendered most interesting to the young, and may be communicated to them with the utmost facility and propriety, in the ordinary schools, by properly-instructed school-masters."[1]

"LONDON, *March* 1853."

Recommended by the British Government;

The original opinion was deposited in the hands of Government, and a large impression of it was printed and circulated. The Government gave effect to it,[2] by ordering the preparation of an elementary work on Physiology applied to health, and suitable diagrams to illustrate it, for the use of schools [3] and by instituting examinations in Physiology, and making a certificate of ability to teach it a title to an increased allowance of pay.

And by the Massachusetts Legislature.

The same evils had been felt in the United States of North America, and the Legislature of Massachusetts resorted to similar means of removing them, as appears from the following extract from the General Laws relating to Public Instruction, passed by the Legislature of Massachusetts. Chapter 229 is entitled "An Act requiring Physiology and Hygiene to be taught in the Public Schools;" and it ordains as follows:—

"Sect. 1. Physiology and Hygiene shall hereafter be taught in all the public schools of this commonwealth, in all cases in which the School Committee shall deem it expedient.

"Sect. 2. All schools' teachers shall hereafter be examined in their knowledge of the elementary principles of Physiology and Hygiene, and their ability to give instructions in the same.

"Sect. 3. This Act shall take effect on and after the 1st day of October 1851. (April 24, 1850.)"

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[1] This document was framed by George Combe himself. At the opening of Milldown School, at Blandford, in Dorset, founded by T. H. Bastard, Esq., (see Part Second, chap. vii.) Sir James Clark, M.D., said regarding it, that "it was signed by every man of eminence in London of the medical profession, with the exception of two gentlemen, who had not given a thought to the matter. It was the copy of a very valuable and important document, published by Mr Combe, and deposited in the office of the Privy Council, where it still remained." (See *The Blandford Express* for 21st Oct. 1864). See Appendix for the list of the distinguished names that were attached to it.

[2] Physiology was included under Natural History, by the Science and Art Department, since its formation in 1853; but it was not specially distinguished in their syllabus for a separate Grant, till 1861.

[3] By the publication of Marshall's Physiological Diagrams, which are still issued. There are now, however, other very good diagrams framed for school use, such as those of Keith Johnston.

The beneficial effects of such instruction: (1.) On human well-being;

Instruction in Physiology and the Laws of Health is highly beneficial to the children, in reference not only to their future social character, but also to their welfare as individuals. It tends to give them intelligent notions of the means by which disease may be avoided, and health promoted in their own persons; and thereby renders doubly efficacious rules given to them by their teachers regarding their personal habits of cleanliness, temperance, and exercise; the avoidance of foul air, damp clothes, ill-aired rooms, and so forth. It comes home to their minds as having a solid basis in nature, instead of resting solely on the authority of the teacher. After they understand the natural, and therefore inevitable, consequences of neglecting or infringing the conditions of health, the pupils will become aware that such conduct may bring suffering and premature death upon them, although they may elude the vigilance of their masters, or defy the admonitions of their friends. Moreover, it will enlighten them in the management of their own offspring, should they live to become parents, and will add to their intelligence and usefulness in following medical advice, in cases of domestic sickness or of general visitations of epidemic disease.

(2.) On mental training.

These lessons are beneficial also as a means of training the mental faculties of the pupils. They teach them to observe accurately things that exist—to study their modes of action—to comprehend their relations and effects, and to draw from them practical conclusions directly involving their own well-being. All the information recommended to be given will be real; and as it will have direct application to the pupils themselves, it will naturally interest them, as well as instruct and discipline their understanding.[1]

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[1] "On Teaching Physiology and its Applications in Common Schools," pp. 1–7. The pamphlet from which the above is extracted contained a paper prepared for the first meeting of the Social Science Association, held at Birmingham, in 1857. It gives a remarkable and surprising proof of the opposition encountered by George Combe in the prosecution of his educational and other labours, that even so recently as this date, the year before his death, the opposition to his views, on such an important non-religious subject, was so decided at this meeting that, though the paper was put on the programme of the Education Section, the reading of it had to be stopped! The paper had been entrusted to his friend, Mr T. Horlock Bastard, of Charlton Marshall, Dorset, George Combe being prevented, by infirm health, from being present himself, and "Mr Bastard was compelled to sit down without accomplishing the reading," on the plea, amongst others, that Physiology had nothing to do with Education!

Household Words for December 12, 1857, commenting on the foregoing paper, and on Dr Roth's advocacy of Ling's System, after narrating, with

SUMMARY OF EARLIER EFFORTS TO INTRODUCE PHYSIOLOGY AND ITS APPLICATIONS INTO SCHOOLS, IN BRITAIN AND AMERICA.

[The following is a résumé of the earlier attempts to write on Physiology for popular use and to introduce the study of the subject, and of Hygiene and Physical Education generally, into schools in this country and America. It shows the active part taken by George Combe and his friends in first introducing it to public notice, and carrying the agitation to practical issue in having it recognised as a subject for school instruction :—

Recommendations of it, early in the century.

1819. George Combe recommends the subject in his "Essays on Phrenology," and continues henceforth to do so at all times, by lectures and publications.

Dr Richard Poole speaks of its importance in education in his "Essay on Education," an able, advanced, and comprehensive treatise, founded on Phrenology, in the *Encyclopædia Edinensis.*

1821. Spurzheim treats the subject largely, in his "View of the Elementary Principles of Education."

1822. George Combe's "System of Phrenology" published.

1823. The Edinburgh *Phrenological Journal* begun, in which the subject is advocated from the first, in numerous articles.

1824. George Combe recommends it in a Review of Spurzheim's "Principles of Education," in the *Phrenological Journal.*

1825. Dr Poole's "Essay on Education," published in a volume.

1827. George Combe advocates it in his "Suggestions" in regard to Edinburgh High School (see foregoing Chapter).

Pestalozzi recommends Physical Education in "Letters on Early Education," now translated, though written in 1818–19.

1828. "The Constitution of Man," where it is advocated, first issued.

Charles Maclaren, editor of the *Scotsman*, and friend of George Combe, recommends its teaching, in a series of five articles in that paper, containing Suggestions for the improvement of Education; reprinted in his "Select Works," vol. ii.

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astonishment, the treatment the paper had received at the Association, says :—"It is a pressing want of civilisation that a correct knowledge of the leading truths of Physiology should be communicated in all schools. We are disposed to second heartily all Mr Combe's suggestions. He does not want children to be taught as if they were in training for the medical profession. His desire is that they should know enough to understand clearly how our bodies are affected by our daily habits, what is apt to produce healthy or unhealthy action in each vital organ—how to economise the force of the machine they are for ever working, and to hinder it, under all sorts of social accidents, from getting out of gear." This article is one of the earliest in a popular journal, in favour of the subject.

See additional remarks on the subject in Part Second, chap. i.; and on the manner of its teaching in Part Third, chap. ii. and v.

1831-1833. George Combe lectures on it, and recommends it for schools, in different towns in Scotland and England.

James Simpson lectures on Education, including Physical, in different parts of the country.

1832. George Combe recommends it for Women, in a review of Mrs Sandford's "Woman in her Social and Domestic Character" in the *Phrenological Journal*, vol. vii. (1831–2). see p 65

Dr Brigham publishes a volume at Hartford, U.S., "On the Influence of Mental Cultivation on Health," founded on Phrenology.

Works begin to appear on the subject.

Dr Barlow advocates it in the "Cyclopædia of Practical Medicine."

1833. George Combe gives lectures before the Edinburgh Philosophical Association, published as "Lectures on Popular Education."

1834. Dr Andrew Combe publishes "The Principles of Physiology applied to the Preservation of Health, and to the Improvement of Physical and Mental Education," based on Phrenology.

James Simpson's "Philosophy of Education" is published, in which it is recommended.

Dr Charles Caldwell issues, at Boston, U.S., "Thoughts on Physical Education," based on Phrenology.

Dr Southwood Smith publishes his "Philosophy of Health."

1835. Physiology taught in the Rev. J. C. Bruce's Academy, Newcastle; visited by George Combe, and described in *Phrenol. Journal*, vol. ix., p. 545.

1836. Dr Caldwell's work reprinted in this country, edited by Robert Cox, with preface by George Combe.

Dr Brigham's work re-edited and published in this country, by Dr Robert Macnish, the distinguished phrenologist, and author of the "Philosophy of Sleep," &c.

Charles Bray,[1] Coventry, lectures to the working classes on "The Education of the Body," and publishes the lecture under this title; new edition in 1847.

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[1] In addition to the two works mentioned in the text, which complement each other, Charles Bray is the author of "The Philosophy of Necessity, or Natural Law, as applicable to Moral, Mental, and Social Science," "Anthropology, or the Science of Man" (Longmans), and other philosophical works. He was for a long time proprietor of the *Coventry Herald*. He has been an ardent phrenologist, a great friend of George Combe and James Simpson, and, throughout a long life, an enlightened and active educationist. He worked strenuously for National Secular Education, holding meetings in its favour, when it was misunderstood and misrepresented. He helped to bring Wilderspin to Coventry, and to establish Infant Schools there; and was one of the most active, at an early date, in forwarding measures to raise the working classes by numerous measures of social reform. Mrs Bray is the author of "Physiology for Schools" (Longmans), "Our Duty to Animals" (Partridge, London), and other educational works, delightfully written for children. ?

Interest in the subject increases.

1837. Horace Mann advocates the subject in America, in a lecture on "The Means and Objects of Education," then published.

Dr Hodgson recommends it in a lecture on Education, delivered in Edinburgh before "The Association of the Working Classes for their Social, Intellectual, and Moral Improvement," and published by request that year.

1837–40. William Lovett, the eminent Chartist, recommends it in various addresses to the working classes in this country.

1838. George Combe lectures specially on it in America.

Horace Mann advocates it in the prospectus to the *Common School Journal* of Massachusetts, of which he was editor.

Dr Samuel Smiles (afterwards the distinguished author of "Self Help," &c.), publishes "Physical Education, or the Nature and Management of Children."

Dr William King advocates the subject, in a paper in the second publication of the Central Society of Education, of which Brougham and Wyse were leaders.

Charles Bray publishes "The Education of the Feelings," in which it is recommended.

1839. George Combe's American lectures, with chapter on Physical Education, published in America, edited by Dr Boardman, and republished in this country, in the same year.

1840. Dr Andrew Combe issues his "Treatise on the Physiological and Moral Management of Infancy."

1842. Horace Mann again advocates the subject at great length, in his Report for this year, as Secretary to the Massachusetts Board of Education, in which he writes a dissertation on it.

Aimé Martin's "Education of Mothers" is translated by Dr Edwin Lee, in which Physical Education is advocated, as also in additional chapters by the translator.

1847. Dr J. P. Nichol, Professor of Astronomy in Glasgow, issues a translation of "The Education of the People," by J. Willm of Strasburg, in which the subject is recommended; but much more strongly by Prof. Nichol, in an excellent preliminary dissertation.

Physiology is first taught in schools in Britain.

1848. William Lovett, the Chartist, *is the first to teach Physiology in a Common school* in this country, in the National Hall School (founded by him in 1842), illustrated by diagrams made by himself.[1]

The subject *is first taught in Scotland*, in the Williams School, Edinburgh, by George Combe, but chiefly by Mr Mattieu Williams, the teacher; and it is advocated in the yearly reports till 1854, when the school was given up.

1849. George Combe visits the National Hall School in Holborn, and sees William Lovett teach Physiology.[1]

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[1] See Part Second, chap. vii.

1850. William Lovett introduces and teaches it in the Birkbeck Schools, in which it has ever since remained a special subject.[1]

The teaching of Physiology and Hygiene in Common Schools *is made law* in Massachusetts. (See Present chapter *ante.*)

Its teaching made law in America.

Life of Dr Andrew Combe, issued by George Combe, where it is largely recommended.

Glasgow Secular School, in St Andrew's Square, opened, in which the subject is regularly taught till the school is given up in 1856.[1]

1851. George Combe tries unsuccessfully to get Physiology introduced into John Watson's Institution, Edinburgh.

William Lovett publishes "Elementary Anatomy and Physiology, for Schools and Private Instruction," with coloured plates, *the first practical text book for use in schools.*[1]

The Oddfellows' Secular School, in Manchester, founded, in which the subject is regularly taught.[1]

Dr Roth[2] *is the first to advocate Scientific Physical Education in this country*, and publishes the first edition of "Exercises and Movements, according to Ling's System."

Scientific Physical Education is first advocated.

1852. Leith Secular School opened, in which the subject is taught.[1]

Dr Carpenter publishes his "Principles of Human Physiology," with "Outline of Psychology," afterwards enlarged, in 1874, into the "Principles of Mental Physiology."

1853. The Memorial on the subject, quoted above, signed by 65 eminent physicians, is presented to Government.

The Science and Art Department fosters it, and prepares diagrams for its teaching. (*Vide supra*).

Physiology fostered by the British Government.

Glasgow Secular School, in Carlton Place, opened, in which it is regularly taught till its close in 1872.[1]

Salford Mechanics' Institution School opened, in which it is taught.[1]

Dr Roth lectures on "Scientific Physical Education" at Redhill Literary Institution.

1854. George Combe gets the teaching of Physiology introduced into John Watson's Institution, Edinburgh, of which he is one of the Directors, and Chairman of a Committee on the School curriculum; and gives lessons there on the subject himself.

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[1] See Part Second, chap. vii.

[2] Dr Matthias Roth, of Wimpole Street, London, is the well-known advocate of the Movement Cure. He has devoted himself, with great enthusiasm and unflagging activity, to the cause of *Rational Gymnastics and Hygiene*, and to their universal teaching in schools, for thirty years; was the first to introduce the systems of Ling and Rothstein into Britain; has published many works on these subjects (Ballière & Co., London); and has thus helped to inaugurate a new era in this country, in regard to Physical Education, in seeking to make it scientific and complete. See the idea and working out of Ling's System in Dr Roth's works; and also in "Physical Education and Hygiene in Schools," by the Editor (London, Kempster & Co.).

The subject rapidly begins to be more strongly recommended.

1854. Manchester Model Secular School opened, in which it is taught.[1]

Huxley advocates the subject in his Address, at St Martin's Hall, on the Educational "Value of the Natural History Sciences."[1]

Dr Roth publishes a letter to Lord Granville, President of the Council, on "The Importance of Rational Gymnastics as a Branch of National Education," and has an interview on the subject with Mr Lingen, then Secretary on Education.

Dr Paget lectures "On the importance of the study of Physiology" as a branch of education for all classes, before the Royal Institution of Great Britain.[2]

Dr Henry W. Acland, of Oxford, recommends Physiology and Hygiene for schools, in his "Memoir on the Cholera at Oxford."

1855. Prince Albert recommends the subject, in a speech at Birmingham.

Dr Hodgson teaches it in Heriot's Hospital, Edinburgh, to a large number of teachers and pupils, and uses Lovett's diagrams.[3]

Dr Roth reads a paper on the subject, at the British Association Meeting at Glasgow.

1856. Dr Hodgson gives a course of lessons on it in Edinburgh High School; and later in many other schools in Edinburgh, London, &c.

The Rev. Dr Robert Lee, of New Greyfriars, Edinburgh, recommends it as Somatology, in the concluding Address at the Edinburgh Philosophical Institution, on National Education.

Dr Acland publishes "Health, Work, and Play," a reprint of part of his work on the Cholera of 1854.

1857. George Combe publishes his larger work, "The Relation between Science and Religion," in which the subject is again strongly advocated.

George Combe gives lessons on it at the Labourers' Club, founded by T. Horlock Bastard, Esq., at Charlton, Dorset (See Part Second, chap. vii., and report of this lesson, Part Third, chap. ii.) and at Holywood, Belfast.

George Combe sends the paper on its Teaching in Schools, quoted above, to the first meeting of the Social Science Association, at Birmingham, which is refused to be read. He afterwards publishes it as a pamphlet in the same year.

Manchester Mechanics' Institution School opened, in which it is taught. (See Part Second, chap. vii.).

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[1] Published as a pamphlet that year, and now included in his Lay Sermons.

[2] It is now published in "Modern Culture," edited by Dr Youmans (Macmillan), with a large number of admirable papers on broader education, by some of our most eminent men.

[3] In the article in *Household Words*, Dec. 1857, it is said :—"These lectures marked quite an era in the spread of physiological knowledge." Next to George Combe, Dr Hodgson has done more for Physiology in schools than any one else, by his able and indefatigable teaching and recommending of it.

Dr Roth originates the Ladies' Sanitary Association; he lectures also to Schoolmasters on Scientific Physical Education.

Physiology is taught in the Grammar School at Magdalen College, Oxford.

Dr Acland publishes "Note on Teaching Physiology in the Higher Schools" (Parker, Oxford), giving a report of the examination of this school on the subject, and suggestions on its teaching.

Household Words advocates the subject in an article on Dec. 12.

1858. George Combe dies.

1858-9. Dr Hodgson gives courses on it to working men and others, in various places.

1859. Herbert Spencer publishes his article on Physical Education, in the *British Quarterly*, since incorporated in his "Education."

1860. Mrs Charles Bray publishes her "Physiology for Schools."

Dr Hodgson publishes two lectures on "Health and Wealth educationally considered."

1861. Physiology is specifically named in the list of the Science and Art Department for which grants are offered.

Physiology finally recognised by Government.

Physiology is recommended for schools in the Report of the Educational Commissioners published this year.

Professor Laycock, of Edinburgh University, recommends it in "The Scientific Place and Principles of Medical Psychology."

1862. Dr Roth is awarded a Medal for his works, models, &c., on Physical Education, at the International Exhibition in London; and again at the Paris Exhibition in 1867.

1864. Milldown School, at Blandford, Dorset, is founded by T. Horlock Bastard, Esq., in which Physiology is made a necessary subject. (See details, Part Second, chap. vii.)

From about this time Physiology, and, in some measure, Hygiene and Physical Education, become more generally appreciated and introduced into schools, good text books are increasingly published, and these subjects make remarkable progress as a part of education. At length, in

1871. Physiology is included and paid for by Government, as a *Specific Subject*, in our Common Schools, under the English Code, carrying out the Elementary Education Act of 1870.

It receives grants in common schools.

1872. The same takes place in Scotland, after the passing of the Education (Scotland) Act.—*Edit.*[1]]

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[1] The above is an attempt to enumerate the earlier efforts at introducing Physiology and Physical Education into schools. It is as full as the materials at command could make it. The Editor will be greatly obliged for additional notes on the early teaching of these subjects.

CHAPTER IV.

ON INSTRUCTION IN MAN'S MENTAL CONSTITUTION.

The need of such instruction.

It is essential that children should comprehend the mental constitution of man as early as possible, because, while ignorant of it, it is impossible to carry home to their minds a rational conviction of the utility of the course of study which we desire them to pursue, and to cause them to form any sensible conception of the ends and objects of their existence. Immediate gratification is their only desire.

This can be taught early and easily.

Children begin very early to think and feel, and one reason why the notion is common that their minds are not prepared to receive this, that, and the other kind of instruction, is that the information for which they manifest no inclination is not natural and not useful. By information not natural, I mean instruction in subjects which owe their interest and importance to temporary fashions of society, and which are not inherent in the constitution of the human mind, —dead languages, for example; and by information not useful, I mean details such as those of Grecian or Roman history, if taught before the child has received any elementary ideas of human nature or of civil institutions, and the interests which arise out of them. But I can answer from observation, that children very early are capable of comprehending the functions of the different Phrenological faculties, their uses and abuses, and the kind of characters formed by their combinations. They early apply these principles to themselves and their associates, and learn to observe the differences of character and to be guided by this knowledge.

It would furnish a plan of life;

After having imparted to a child a knowledge of its own bodily and mental condition, we have laid a foundation for further education. The child will readily understand the advantage of forming a plan of life,—that is, of following the dictates of certain faculties in preference to others as the guiding authorities. Suppose, for example, that a child possesses an active temperament, good intellect, average moral sentiments, and large Love of Approbation, which is a very common combination, the strongest feeling, at the dawn of reason, or manhood, will be ambition to obtain a settlement in the world; and how different will be the notions formed of gaining this end, according to the enlightenment of the intellect on the points now under discussion.

And of the true pursuit of happiness.

In a state of ignorance, the plan of life will, in all probability, embrace projects systematically arranged for the acquisition of wealth and power alone, and all other attainments will be classed in the second order, to be pursued if opportunity offer and inclination prompt. When enlightened, the individual would perceive these to be merely the means of attaining happiness, and he would recognise happiness itself as consisting in health of body and habitual exercise of the higher faculties of mind; in short, the object of his life would be to obtain gratification to intellect and moral sentiment, instead of regarding this as a mere by-end, not essential either to happiness or prosperity.[1]

What principles should be taught.

By teaching children the elements of their own minds, we would make them comprehend—

1*st.* That the propensities and sentiments are blind impulses and emotions, and require direction from intellect.

2*d.* That intellect is a combination of powers fitted for acquiring knowledge, but that it must be exercised before knowledge can be gained.

3*d.* That the power of all the faculties is increased by exercise, and hence that if they do not exercise the organs of observation and reflection, they will not possess knowledge to illuminate the feelings nor strength or vigour to control them.[2]

The kind of instruction recommended.

[3] This society may prepare the public for teaching Phrenology, as the Philosophy of Mind, in schools. I can conceive it possible for it to establish a school in which Phrenology should be taught, in its full length and breadth, to the pupils, as one branch of their education. For example, I would propose to teach them, by the aid of drawings and preparations, the general anatomy of the brain and nervous system; of the heart, lungs, and blood-vessels; and of the stomach and other digestive organs. By this instruction, I would

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[1] From MSS. [2] From MSS.

[3] From an Address delivered at the Anniversary Celebration of the Birth of Dr Spurzheim, and the Organization of the Boston Phrenological Society (U.S.), on December 31, 1839, and published by the Society as a pamphlet. Printed in the *Phrenological Journal* for 1842, vol. xv. p. 193.

The good effects of such instruction:

endeavour to give them clear ideas of the connection between the mind and the body, and of our dependence for health, vigour, and enjoyment on the condition of the organic system. I would next introduce them to a knowledge of the situations and functions of the different mental organs, and their spheres of activity, with the uses and abuses of each. Some of the advantages which I should expect to follow from this instruction would be these:—

(1.) It enables children to co-operate in their own education.

The children would become intelligent co-operators with their parents and teachers in their own education. At present, great anxiety is expressed by many persons to know the faculties of their children, that they may train them; but it occurs to few that the most efficient co-operators in this training will be the children themselves, when they know their own constitution. I am not a father, but I have considerable experience in training the children of a relative, who lost her husband when a numerous family were young; and some of my most intimate friends have been phrenologists, and have trained their children, as I did those of my relative, by instructing them in the details of Phrenology from their early years, and teaching them to think and act on the principles which it embodies. We cannot boast of having overcome every evil tendency in our young charges, or supplied every deficiency. My experience leads me to confess, that the highest and best gift which a child can inherit is a well-formed and well-constituted brain. Where a peculiar combination exists, I know of no method by which its effects can be removed; and if a feeble or diseased organization be inherited by the child, I have discovered no means by which its mental manifestations can be rendered equal to those of a brain enjoying native health and vigour. I disavow, therefore, all pretensions to the power of perfecting, by means of Phrenology, every individual child; but there are degrees of comparison: there may be good, better, best, as well as bad, worse, worst. Need I assure the members of this society, that by teaching to children the functions of the different organs, and the uses and abuses of the different faculties, the good have been rendered strikingly better, and the worst have become less bad. Whenever the organization has been of a high order,—that is, where the quality of the brain was good, and the moral and intellectual organs predominated,—the results have been truly admirable. A few brief remarks will suffice to explain the operation of this kind of instruction.

The organs exist and perform their functions in children, as they do in adults. The feelings are first developed; they are strong, they are blind, and they sometimes conflict. Phrenology enables the

(2.) It gives a knowledge of the nature and action of the faculties.

child to understand the nature, objects, uses, and relative authority of each. It introduces light and order where darkness and chaos formerly reigned. I can well recollect the painful conflicts which I experienced in my own childhood, and the difficulty which I felt in determining which feeling was right. For example, having a large Self-Esteem and tolerably good Combativeness and Destructiveness, I was easily offended, and often burned to gratify my feelings of revenge; but Benevolence and Conscientiousness would whisper that this was wrong. I felt instinctively the opposition between these feelings, but knew not their relative values. I sometimes thought that submission to aggression and forgiveness of injuries were cowardice, and indicated a want of manly spirit; and if the better principles actually prevailed, I rarely enjoyed the satisfaction of the conscious triumph of virtue. Again, having Love of Approbation equally large with Self-Esteem, I felt, in my childhood, these two emotions constantly conflicting. Love of Approbation prompted me to acts of vain-glory and boasting, of which Self-Esteem and the moral sentiments were soon heartily ashamed. I resolved to correct this fault, and put on a dogged indifference to the opinion of others, which was to me equally unnatural and unsatisfactory, and in itself unamiable. I could not adjust the balance between the two faculties. Nay, not only did this conflict annoy me in childhood, but it persecuted me far on in life, and I was constantly liable to run into an excess of complaisance, to give way to an undignified desire to cultivate favour by compliances, or to fall back on Self-Esteem, and set opinion at defiance. Phrenology conferred on me the first internal peace of mind that I experienced; and although I am still conscious of defects in external manners, arising from these disadvantages of youthful training, I now know, at least, what are the character and value of the different emotions that visit me. I could give many other examples, but these will suffice to render my proposition intelligible, that a knowledge of the faculties may be rendered of the highest utility to children themselves.[1]

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[1] See, in the *Phrenological Journal*, vol. vi. p. 238, a very interesting account of a mother's experiences in teaching Phrenology to her children, her plans to render it practical in their education and life, and her use of a "Daily Record of Duties, Organic, Moral, Religious, and Intellectual," which James Simpson says was used in many families throughout the country ("Philosophy of Education," 2d edit. p. 114). See the practical application of Phrenology in Education, in "Phrenology in the Family; or the Utility of Phrenology in Early Domestic Education," by the Rev. Joseph A. Warne, of Brooklyn, near Boston, U.S. (Edinburgh: Maclachlan & Stewart); and in Charles Bray's

(3.) It strengthens the action of the superior faculties.

Let us suppose that the child whom we are training possesses the most favourable combination of faculties and organs, viz., full animal and large moral and intellectual organs. He will still be conscious of conflicting emotions. The propensities will give desires, perhaps those of sex, or that of property, or those of vanity and ambition, at moments when the sentiments are off their guard, and the intellect treacherous; and evil may be committed, which conscience may subsequently punish, but which might, as it appears to me, have been more successfully resisted, if the young offender had early been made acquainted with the nature of the enemies within him. Not only so, but a knowledge of the functions and spheres of action of the superior faculties is highly conducive to the formation of a bold, intrepid, and lofty moral character.

This illustrated by youthful experiences;

In discussing this subject with a friend in Scotland, who is now a well informed phrenologist, he favoured me with the following remarks:—"I am able," said he, "to recollect occasions in my boyhood, when my own instinctive faculties rebelled against certain political maxims, practices in trade, and religious opinions, which I heard inculcated or defended by persons to whom I looked up with respect, as wiser and more virtuous than myself. Inward emotions, nevertheless, condemned them, and I ascribed this state of mind to self-conceit, to imperfect knowledge or want of experience, and tried to bend my judgment to their standards. I have lived," he continued, "to be convinced that the emotion of the child, in several of these instances, evolved the sounder morality; and as a man I have defended, with deliberate conviction, the positions which first dawned on my mind as instinctive impressions in childhood. But at that age and long after, I suspected them to be wrong, because they were at variance with general opinion; and I had no standard by which to measure them and the current maxims of the world. In other instances," added he, "I have discovered that my first emotions were egregiously wrong. I may mention one as an illustration. My first impressions in regard to the treatment of criminals were all severe, and even sanguinary. It appeared to me that the most effectual method of stopping highway robbery would be, for every traveller to carry pistols and blow out the brains of the robber, instead of giving him his purse. As a boy, I resolved to follow this practice when I became a man. I rejoiced in criminal executions, read accounts of them with great interest, and had strong desires to

excellent "Education of the Feelings" (Longmans), 3d edit. with Phrenological nomenclature, 4th edit. without it.

This illustrated by youthful experiences

go to see them; but when I did so, I always felt ashamed and repented. My school companions used to debate, with varying talent, the propriety of executions, and of their going to witness them, and I was confounded by the conflicting feelings and arguments which I heard them express. I can now refer the severity of my own instincts to the combined powers of Destructiveness, Conscientiousness, and Firmness, acting in ignorance of the natural dispositions of criminals, and of the temptations to which they are exposed; while I can trace the cruel views of some, and the benignant and forgiving spirit which characterized others of my companions, to peculiarities in their own organization, all acting, like mine, in blindness and ignorance. Nor were these merely youthful errors, which subsequent knowledge of the world was destined to correct. On the contrary, they were the germs and buds of the dispositions of the future men. Some of my schoolfellows were speedily transferred to commands, as young officers, in the army or navy. In these situations, they gave effect, so far as their limited power permitted, to the maxims which their instinctive impulses or their associations in life had previously evolved. Others entered the profession of the law, became eminent as political partisans, and continue, to this day, to display the character which dawned in the play-ground of the school." So far my friend.

Which show the need of this instruction.

I may be in error, but on reflecting on the scenes here described—and many of us may be able to recall similar experiences—I cannot escape from the conclusion, that these youths would have been greatly assisted in their endeavours to reach true and humane principles of judgment and action, if they had been instructed in the existence, functions, and spheres of activity of their various faculties, and in the effect, on their judgment and feelings, of their own peculiar combinations of them. I may add, that I have not traced this confounding of right and wrong in judgment in my young relatives, who have been trained in a knowledge of Phrenology. They have, like other children, yielded occasionally to the impulses of the inferior feelings, but they saw clearly, both that they were wrong, and wherein they were in fault; and I found that Phrenology afforded a science and language of analysis between them and me, which enabled us speedily to come to a clear understanding respecting the merits or demerits of any particular line of conduct which they had pursued. I believe that I address more than one member of this society who have already used Phrenology in the way I am now recommending, in the instruction of the young, and who have seen the advantages which I have described to result from it.

(4) It proves, and gives faith in, the ultimate victory of the superior faculties in the world:

Again, in the instruction of youth, parents and teachers draw information from two great sources—the Bible and works of profane history; but how dissimilar are the maxims which flow from these two fountains into the minds of children! In the New Testament, the benignant spirit of Christianity beams forth in all the soft radiance and enlivening freshness of a lovely vernal morn, filling the young soul with truthfulness, beneficence, and joy. It raises it above the earth, and trains it to cherish a glorious affection for all that is pure, holy, and exalted. Reading profane history, on the other hand, is like looking through a long vista on which the dark tempest of human passion sheds flickering and deadly gleams of light, revealing at intervals every form of misery, ignorance, and crime. Here and there, in the long reach of vision, a glow of sunshine penetrates through the deep obscurity, and bodies forth a few breathing forms of lofty intelligence and stately virtue. They stand, majestic and serene, amidst the clouds and whirlwinds which rage around them; and, inspired with a wisdom greatly in advance of their age, they look forward, with solemn steadfastness and the bright prophetic eye of faith, to the dawn of happier days than those which they were permitted to see. Such were Socrates and Plato, Melancthon and Locke, and the noble reformers of every age. But few and far between do these visions of light and beauty appear in the pages of this world's history. In general, it records the victor's triumph and the captive's anguish; fields torn up by the ploughshare of destruction, and hearths laid desolate; the widow's lamentation and the infant's shriek; the deadly havoc of pestilence and famine, causing that cup of misery to run over, which man's malignant ire had wanted power, but not the will, to fill to its very brim. How can the Christian virtues be cultivated in the soul by the contemplation of such scenes, exhibited on the great stage of the world since time began! We observe also, that, for the most part, history is written in the very spirit in which the deeds which it records were done. The vivid imagination and the eloquent pen of genius catch their inspiration from the propensities; and the ruthless conqueror stands before us, as a being of gigantic power, commanding our awe at least, often enlisting our sympathies, and serving as a strong excitement to the youthful mind to go and do likewise.

In the scenes of History;

Again, in the study of Greek and Roman literature, what motley groups of gods and goddesses, of monsters and of miscreants, are introduced to the youthful mind, emblazoned with the splendours of poetry, painting, and sculpture! Their thoughts, words, and actions, as presented in the classic page, stand too often in contradiction to the doctrines and precepts of Christianity.

And the study of ancient literature.

I ask, how is the youthful mind to escape unscathed from the contamination of such ideas, administered to it during its most active period of assimilation and growth? It does not escape unharmed. History shows that too generally Christianity has yielded, and that the maxims of the world have prevailed. In point of fact, at this moment, the minds even of the most civilised nations are animated much more by the selfish and barbarous spirit of history than by that of Christianity. The former comes forth into day, while the latter is seen too often retiring into the closet and the sanctuary. How few minds, even in this free country, have full confidence in the practical power of human virtue! I hear around me conservative alarms expressed, by the good, the wise, and the patriotic, lest the founders of your government should too early have placed an unlimited reliance on man's moral nature, when they instituted universal suffrage. How many schemes of enlightened beneficence and practical improvement are checked in the bud, or shrivelled up into feeble and inefficient forms, chiefly from want of faith in their supporters, in the power of right to commend itself to the acceptance of the people! And whence have arisen this paralysis of virtue, and this despondency in her cause? From the deadly fountain of history, unpurified by an analytic philosophy, unconsciously to ourselves, we form the conviction that the future will resemble the past. The past is dark and desolate; and those men, therefore, are regarded as visionary dreamers, who, notwithstanding all the tempests of the long and dreary night which history records, see the morning star of happiness arisen, and who still place an unshaken reliance on man's capacity for improvement.

The general evil results of these ideas.

How, then, may a generation be trained which shall believe in the adaptation of man's nature to the Christian morality; which shall read the history of the past without having its faith in human virtue blighted, its sensibilities to the true, the refined, and the holy deadened, and its hope in the future blasted and cut off? With all deference to the judgment of this assembly, I answer: By teaching to the young Phrenology. Give them an *early*, and it will be an abiding conviction, that certain faculties exist and are the fountains of all human action. Lead them to trace the spheres of activity of these, and to distinguish between their uses and abuses. Open up

By what means these evils may be prevented.

to their perception the superior authority and governing power of the moral and religious sentiments, and render them familiar with the objects of intellect; teach them that it is given to enable us to acquire knowledge of all that God has instituted which it behoves us to know, that we may apply our faculties aright; finally, train them to the habit of tracing misery to departures from the proper uses of the faculties, and enjoyment to their uses, and you may then present the pages of history to their consideration, not only without danger, but with direct advantage.

The true interpretation of History.

They will then read in them the records of the animal propensities struggling to reach happiness unguided by the moral sentiments; labouring to establish empires founded on force, fraud, violence, and injustice; but constantly failing in their schemes, and producing only wretchedness and disappointment. Youthful minds thus enlightened will strip the conqueror of his halo of glory, and see in him the propensities, combined with mighty intellect, devastating the mansions of the peaceful and the good, and immolating hundreds of thousands of his fellowmen, to gratify his own selfishness and ambition. They could not love or admire such a being.

They will discover in the existence and functions of the moral sentiments, that man is really adapted to Christianity; and that the dismal past is not the anticipated record of the future; but that, by the steady cultivation of his various powers, and their direction according to the laws of the Creator, man may realize all that his warmest advocates anticipate, in virtue, intelligence, and enjoyment.

Possessed of a firm conviction of the existence and power of man's moral nature, they will gird up their loins in virtue's cause, and advance with a steady and undaunted step in the grand career of social improvement, unmoved by opposition, undismayed by obstacles.

(5.) It increases the power to analyse actions and arguments.

In this country, many excellent men fear the power of the demagogue to mislead the people. I should like to see the most splendid orator that ever bent a people to his will, address an assemblage of men who had been instructed in Phrenology from their youth, who had been trained to analyse every thought, word, and action, quickly as it was uttered, before whose mental wisdom the boundaries of good and evil had been made to stand forth, as clear and well defined as the rocks which just greeted the eyes of the Pilgrim Fathers, when they reached this land of their hopes and fears. I should rejoice to witness the attempts of Demosthenes himself to instigate such an assembly to deeds of outrage and injustice, to persuade them that individual and national grandeur could be best achieved by triumphant propensities and virtues prostrate,—in short, that the remedy for all social evils was to plunder the rich, to degrade the refined and intelligent, and to enthrone confident ignorance and rude propensity in high places of authority and power. The orator would be committed to a lunatic asylum by a unanimous vote of the people, whose reason he had thus insulted, and whose moral emotions he had outraged. It is true, that no candidate for popular favour would venture even now to present such naked propositions of injustice to the people, but many daily offer to their acceptance injurious schemes thin clothed with sophistry and gilded by passion.

The importance of this in social and political life.

In proportion to the power which you conferred upon your people of sifting moral and political propositions, and resolving them into their elements, will be their dexterity in stripping off the ornamental finery from the sophist's speech, and in resisting the appeals to their passions. Your institutions call on your people to act on questions of great moment, and often of much difficulty. They need an instrument of moral analysis, at once simple and comprehensive, to enable them to do so with intelligence and success. Such an instrument is Phrenology.

If you wish, therefore, to deprive the demagogue of every possibility of success, *teach your young generation a sound Philosophy of Mind;* you will find that it is also the handmaid of a pure and practical Religion.[1]

The teaching of Phrenology would demonstrate:

Phrenology, if taught as an elementary branch of education, would undoubtedly remedy some of the evils prevalent in society. It would demonstrate to the senses and understanding of men—

(1.) The laws of Health.

First. The intimate connection between sensation and bodily health; and if this were rendered palpable to every capacity, men could not resist modifying their institutions and habits of life, so as to secure more of health and enjoyment from this source than at present. It would be felt as altogether inconsistent with the indubitable rights of human beings, to subject the lower classes to that degradation of their rational nature which is inseparable from excessive labour and absence of moral and intellectual stimulus; and it would no longer be reckoned a degradation, on the part of the intelligent and refined, to submit regularly to that degree of muscular exertion which the Creator has rendered indispensable to health.

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[1] *Phrenological Journal*, for 1842, vol. xv. p. 193.

(2.) The nature and gradation of the mental faculties.

— *Secondly.* The fact that man is a rational and social being would be practically acted upon. If this truth and its consequences were understood by the mass of society, it would be seen that, until social institutions, and the *leading* aim of *daily pursuits*, shall bear reference to the gratification of the *moral* and *intellectual powers*, happiness cannot be obtained; and, if this law of the human constitution were *generally* understood and recognized, improvement would assuredly follow.

In no country have human pursuits been regulated on this principle; Britain is widely departing from it, in her excessive exertions to acquire wealth. It ought never to be forgotten, that hitherto the most enlightened men have never known human nature as an object of science; they have known it only through their individual feeling and experience, and been extremely ignorant of the influence of organization on its exercise and enjoyments, while the great mass of mankind, rich and poor, in every country, have never given it, and its wants and capabilities, one moment's consideration. The aim of life of most individuals has been determined exclusively by the pursuits and manners existing around them; they have viewed only that portion of the world and human nature which lay nearest to themselves, and which was calculated to influence their private pursuits; and remained unconcerned about, and totally ignorant of, every institution and interest which existed beyond this limited sphere.

How it does this.

Phrenology, when taught to youth, will instruct them concerning the nature of man, as it exists in the race, and as modified in individuals; it will prove to them the relative importance of the different faculties, enable them to form a just estimate of the relation of every pursuit and institution — first, to these faculties, and secondly, to the general promotion of human enjoyment; it will demonstrate that the law of man's nature being that of a social being, individuals cannot be happy by confining their attention to their private interests, but must exert themselves to establish institutions and pursuits formed with a due regard to the gratification of the highest elements of mind, otherwise that *all* will suffer.

(3.) The principles of judgment.

Thirdly. Phrenology, by unfolding the functions and sphere of activity of the primitive faculties, will enable individuals to perceive that the Creator has really intended that man should enjoy existence as a rational being; and, by the same means, it will afford them ultimate principles by which to judge of the truth of all doctrines, and the utility of all institutions, and to choose those which are best suited to the development of their rational nature.

(4.) The laws of human progress.

Fourthly. It will show that, to a vast extent, the mental qualities of individuals may be improved by attending to the laws of Physiology, in the formation of marriages, and in the rearing of offspring. And,

(5.) The true means of lessening disease and misery.

Fifthly. That bodily disease, and consequent misery, may be greatly diminished by the same means. After an individual is instructed in the fundamental principles of Physiology, and the most common laws of the transmission of bodily qualities, it is astonishing to what extent it becomes possible to trace the great calamities of life to ill-advised unions. Two individuals of consumptive families marry, and the children languish till the dawn of manhood, and die; two individuals belonging to families subject to fever and inflammation marry, and the children are carried off by acute diseases; two individuals of highly nervous temperaments marry, and the children die of convulsions, water in the head (from over-excitement of the brain), or other diseases, clearly referrible to the excessive exaltation of the nervous system; or one party, possessing a favourably developed brain, marries one in whom the animal organs predominate, and some of the children inherit the inferior qualities, and bring sorrow and disgrace on their parents, and misery on themselves. Education is so defective, and human nature so little studied, that thousands of individuals, who are convinced of the truth of these remarks generally, and who desire to act on them, find it impossible to obtain the instruction necessary to enable them to do so. This state of education will appear intolerable when Phrenology is more widely diffused.

These opinions are facts not fancies.

Persons who have never become acquainted with the springs of human nature, and have no knowledge of their constitution and mode of operation, conceive us writing mere fancies in delivering these opinions. But wherever there is inherent penetration, mind is perceived to have fixed qualities, and powerfully operating energies, as well as matter; and confidence is felt that it may be improved and directed. Let us not despair, therefore, of the fortunes of man.[1]

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[There can be no doubt of the importance of teaching the nature and functions of the mental faculties. If it is wise and good to teach the organs and functions of their Physical constitution to children, as is now generally recognised, it is surely equally neces-

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[1] *Phrenological Journal*, vol. vi. (1829–30), p. 624.

The importance of Mental Philosophy as a branch of instruction.

sary to explain their Mental constitution to them. The only question in regard to the subject would seem to be, the possibility of making it simple enough to be intelligible to children, as Physiology and other sciences can be made. On this point I have personally no doubt, when it is properly taught; and, when we become wiser and more skilled in developing the faculties of our children, and in preparing them for the work of life, I am sure that Mental Philosophy will form part of Common School instruction. Of course, when taught, the *matter* of the instruction given will depend on the system adopted by the teacher; but of the desirability of such teaching, based on a sound philosophy, and adapted to the youthful mind, there ought to be little difference of opinion. This was George Combe's decided conviction, pleaded for, as we have seen, with all his usual earnestness and practical sagacity. With him, of course, Mental Philosophy was Phrenology, and when putting into practice his own convictions of the need of its being taught to children, he could teach no other. He, therefore, taught it in the Williams School, Edinburgh; and he bears abundant testimony to the ease and pleasantness with which the instruction could be given, and the lively interest it excited, as well as the practical power the young pupils gained over the problems it included. It is to be noted, that this instruction was given to children at an early age, from ten to twelve and upwards. Evidence of this, and examples of the kind of instruction given, will be found in the Appendix, and elsewhere in this work.

George Combe's teaching of Phrenology misunderstood.

Like most things that George Combe did, his labours in this field of instruction were, naturally enough, misunderstood and written against, even by those agreeing with him on other unpopular points, as on Secular Education. The Williams School was looked upon as a propaganda for Phrenology, which, of course, it was not, the aim of the school being simply to embody the general principles of training and instruction advocated by George Combe, of which Mental Philosophy was only one. Had the other subjects been subordinated to this one, there might have been ground for the accusation. In November 1849, the year after the school was opened, a letter appeared in the *Scotsman*, giving expression to this opinion, written by "A Secular Educationist," a man now eminent in the literary world, and animadverting very strongly on the teaching of Phrenology in that school. To this George Combe replied, with a quiet but forcible statement of his position. Regarding his teaching of Phrenology there, he says :—

His defence of its teaching.

"If, without offence, I may be allowed to speak of Phrenology, I should say that those who have most extensively studied this subject, perceive that men are idiots when their brains are below a certain size; that, *cæteris paribus*, they are predisposed to animal passions when the base of their brain predominates, to moral emotions when the coronal region is largely developed, and to intellectual pursuits when the anterior lobe is large; and, moreover, that particular animal passions, moral emotions, and intellectual faculties, are strong or weak in proportion as particular portions of the brain are large or small. These facts, if true, cannot be unimportant; and no one can know whether they are true or false without qualifying himself to observe, and practising extensive observations. It is the conviction of the truth, and the experience during thirty years of active life, of their practical importance, that has induced me to teach them in Mr Williams' school. But it would be pure absurdity to suppose, as your correspondent says some persons may probably do, that because such are my individual opinions, all the advocates of Secular Education must necessarily mean by that phrase, schools in which Phrenology is taught. On the contrary, that expression really indicates only the exclusion of dogmatic religious instruction; the choice of secular subjects being left to those who shall, by law, be entrusted with the management of the schools. Every consistent phrenologist who is convinced of the importance of the functions of the brain, will naturally desire to see them taught as a branch of Common education, just as he desires to see the functions of the lungs, and those of the digestive viscera explained; but he will not be so narrow-minded as to oppose the introduction of all other branches of secular knowledge into schools, because his fellow-citizens are not yet prepared to admit Phrenology. For my own part, so thoroughly am I convinced that Phrenology, because it is true and important, will follow in due course of time, that I shall support schools in which *any portion* of secular knowledge is communicated, and regard that portion as a public boon."[1]

Schools in which Phrenology was taught.

After George Combe ceased to teach the subject, on account of failing health, Mr Williams carried it on with equal pleasure and success, till the school was given up. Phrenology was also taught in the Leith Secular School, and in the Glasgow High School,[2] but not elsewhere, as far as I can ascertain. It was, however, introduced and taught in many American schools. Dr Samuel

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[1] From letter to the *Scotsman* of 24th Nov. 1849.

[2] See Part Second, chap. vii.

Howe, head of "the Perkins Institution and Massachusetts Asylum for the Blind" from 1832, and the celebrated teacher of the remarkable child, Laura Bridgman, (see Appendix), thus speaks: "Before I knew Phrenology, I was groping my way in the dark, as blind as my pupils; I derived very little satisfaction from my labours, and fear that I gave but little to others. Our upper classes are all instructed in the general principles of intellectual philosophy, and we explain to them both the old and the new systems; but I never knew one of them who did not prefer the latter, while I have known many who have taken a deep interest in the philosophy of Phrenology, and heard them avow that they were made happier and better, by understanding its principles."[1]

Mental Philosophy is neglected in schools.

I have been unable to learn that Mental Philosophy, under any system, is being anywhere taught in the schools of this country.[2] I have known and seen Logic taught to young pupils (and good text-books have been framed for its teaching[3]), but not the Science of Mind, with an exposition of the various faculties, functions, and laws of the Mind. This is undoubtedly a want, which the future, more or less distant, will see supplied.—*Edit.*]

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[1] "America," vol. iii. p. 186. Dr Howe was justly considered one of the best teachers in America, as proved by his wonderful success with Laura Bridgman and his conduct of his Institution. He was also the inventor of an alphabet for the blind, and one of the founders of the Massachusetts "School for the Idiotic and Feeble-minded." See an interesting account of his Blind Institution, in George Combe's "America," vol. iii. p. 184. He died in 1876.

[2] In Mrs Willard's system of Female Education, carried on in her great Institution at Troy (see p. 66), Mental Philosophy, as expounded by Dugald Stewart, formed one of the branches of study, a wonderful advance for the time, (her book on Female Education was published in 1819, and her great school at Troy opened in 1821). This was the first school in which Mental Philosophy was made a branch of Education. See *Phrenol. Journal*, vol viii. (1832-34), p. 45, for a review of her system, which well deserves the attention of all Educators.

[3] As Whately's "Easy Lessons on Reasoning," which is included in the list of the Commissioners on Education in Ireland; and other works.

CHAPTER V.

ON THE TRAINING OF THE MORAL AND RELIGIOUS FACULTIES THROUGH SCIENCE, OR "THE ORDER OF GOD'S SECULAR PROVIDENCE."

I. THE PRINCIPLES OF GOD'S MORAL GOVERNMENT OF THE WORLD: WITH A HISTORY OF GEORGE COMBE'S SEARCH AFTER THESE.

Instruction in the Moral government of the world necessary.

THE question which at present engages so much public attention, viz., What should Secular Education embrace? appears to me to depend for its solution on the answers to some previous questions, viz., Does God really govern the world? Is the *mode* in which he governs it discoverable? If it be scrutable and intelligible, is it adapted to the nature of man? If man be capable of acting in harmony with it, what will be the consequences of his neglecting to make himself acquainted with it, and to adapt his conduct to its laws?

It will not generally be disputed, 1*st*, that Secular education should include an exposition of everything which is necessary to be known to enable us to act in harmony with the order of God's secular providence, if such an order exist,—be discoverable,—and be designedly adapted to the human faculties; and 2*dly*, that it should embrace also such a training of all our powers, physical and mental, as may be necessary to establish in us the disposition to act habitually in harmony with that order.

Early ideas of this moral government.

In the early part of the seventeenth century, religious men believed that the government of the world was then administered by special acts of Divine interference in the affairs of man, in the manner described in the books of the Old and New Testaments. If this opinion was well founded, and if the same system of government is continued in the present day, then instruction in the principles and mode of action of that government should constitute the substance of *secular* as well as of religious instruction; because such knowledge alone would reveal to man the influences by which his condition on earth is determined, and enable him to adapt his conduct to their agency. The curriculum of study in most of our schools and universities was instituted by men who believed not only that this system of government prevailed in their own day, but that it would continually exist; and this opinion influences the judgment of the great majority of religious persons to the present hour.

These not countenanced by science or experience.

This belief is neither countenanced by science nor warranted by experience, as applicable to the times in which *we* live; but, on the contrary, the world is *now* governed by natural laws designedly adapted by the Divine Ruler to the human mind and body, and calculated to serve as guides to human conduct. If the scheme of government by special interpositions of Divine power be not now in force, and if human affairs be ruled by God's providence operating through the medium of the constitution and relations of natural objects and beings, then a knowledge of these things and beings, and of their modes of action, will be a key to the knowledge of the order of God's providence in the secular government of the world, and will constitute valuable instruction for the young. It will unfold to their understandings and their consciences the temporal duties which God requires them to discharge, and the mode in which they may most effectually discharge them; and it will enable them to comprehend the rewards and punishments by means of which He enforces obedience to his requirements in this life.

The proposed problem stated.

As few persons doubt that God actually governs the world, we may assume this point to be conceded, and proceed to inquire, whether the mode in which his government is maintained be discoverable by human reason. I beg to remind the reader that, if this world be *not* now governed by acts of special interposition of Divine power, and if it be *not* governed by natural laws cognizable by the human understanding and adapted to the nature of man, it must necessarily be a theatre of anarchy, and consequently of atheism; in other words, a world without the practical manifestation of a God. If, on the other hand, such laws exist (as science proclaims), they must be of Divine institution, and worthy of our most serious consideration.

Are these moral laws discoverable?

Accordingly, the profoundest thinkers generally admit that this world *is* governed by natural laws[1]; and hence the chief practical questions that remain to be solved are these:—Can human intelligence discover the *means* by which God governs the world? And, if it can do so, is it able to modify the action of those means, or to adapt human conduct to their influence? These topics, accordingly, shall form the first subjects of the present inquiry.

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[1] I was indebted to Dr Spurzheim's work on the Natural Laws of Man, for my first appreciation of the importance of these laws.—(G. C.)

George Combe's early history in search of these laws:—

In introducing them to the reader, perhaps I may be excused for stating the circumstances which first awakened in my own mind that deep interest in the subject which has induced me so often to address the public in relation to it.

By pursuing this course, I shall be under the necessity of introducing a portion of my individual history—a perilous thing for a living author to do, and one which naturally exposes him to the imputation of vanity and egotism: but, as a counterbalance to this disadvantage, the development of the origin and progress of a writer's convictions may probably, with some readers, invest the abstract questions of which he treats with a greater living interest, while it will afford facilities to all for deciding, whether he is labouring under an idiosyncrasy of perception and judgment, or is advocating, however inadequately and imperfectly, really interesting and important truths.

In the nursery: *How* does God reward?

Fortified by these considerations, and soliciting the indulgence of the reader, I beg to mention, that an event so common and trivial as almost to appear ludicrous when introduced into a grave discourse, but which is *real*,—led, by insensible degrees, to the convictions which I am now endeavouring to diffuse.

When a child of six or seven years of age, some benevolent friend bestowed on me a lump of sugar-candy. The nursery-maid desired me to give a share of it to my younger brothers and sisters, and I presented it to her to be disposed of as she recommended. She gave each of them a portion, and when she returned the remainder to me, she said, "That's a good boy—God will reward you for this." These words were uttered by her as a mere form of pious speech, proper to be addressed to a child; but they conveyed to my mind an idea;—they suggested intelligibly and practically, for the first time, the conception of a Divine reward for a kind action; and I instantly put the question to her, "*How* will God reward me?" "He will send you everything that is good." "What do you mean by 'good'—Will he send me more sugar-candy?" "Yes—certainly he will, if you are a good boy." "Will he make this piece of sugar-candy grow bigger?" "Yes—God always rewards those who are kind-hearted." I could not rest contented with words, but at once proceeded to the verification of the assurance by experiment and observation. I forthwith examined minutely all the edges of the remaining portion of sugar-candy, took an account of its dimensions, and then, wrapping it carefully in paper, put it into a drawer, and waited with anxiety for its increase. I left it in the drawer all night, and next morning examined it with eager curiosity. I could discover no trace of alteration in its size, either of increase or decrease. I was greatly disappointed; my faith in the reward of virtue by the Ruler of the world received its first shock, and I feared that God did *not* govern the world in the manner which the nursery-maid had represented.

At school: *How does God govern the world?*

Several years afterwards, I read in the "Grammatical Exercises," an early class-book then used in the High School of Edinburgh, these words: "*Deus gubernat mundum*," "God governs the world." "*Mundus gubernatur a Deo*," "The world is governed by God." These sentences were introduced into the book, as exercises in Latin grammar; and our teacher, the late Mr Luke Fraser, dealt with them merely as such, without entering into any consideration of the ideas embodied in them. This must have occurred about the year 1798, when I was ten years of age; and the words "*Deus gubernat mundum—Mundus gubernatur a Deo*," made an indelible impression, and continued for years and years to haunt my imagination. As a child, I assumed the fact itself to be an indubitable truth, but felt a restless curiosity to discover *how* God exercised his jurisdiction.

In political government, *how?*

In the course of time, I read in the *Edinburgh Advertiser*, the newspaper taken in by my father, that Napoleon Bonaparte (instigated and assisted, as I used to hear, by the devil) governed France, and governed it very wickedly; and that King George III., Mr Pitt, and Lord Melville, governed Great Britain and Ireland—not very successfully either, for I read of rebellion, and murders, and burnings, and executions in Ireland; while, in Scotland, my father complained of enormous Excise duties, which threatened to involve him in ruin. I saw that my father ruled in his trade, and my mother in her household affairs, both pretty well on the whole; but with such evident marks of shortcoming and imperfection, that it was impossible to trace God's superintendence or direction in their administration.

In school discipline, *how?*

In the class in the High School of which I was a member, Mr Luke Fraser seemed to me to reign supreme; and as I felt his government to be harsh, and often unjust, I could not recognise God in it either. Under his tuition, and that of Dr Adam, the Rector of the High School, and of Dr John Hill, the Professor of

Latin in the University of Edinburgh, I became acquainted with the literature, the mythology, and the history of Greece and Rome; but in these no traces of the Divine government of the world were discernible.

In college studies, *how?*

These were the only governments of which I then had experience, or about which I could obtain any information; and in none of them could I discover satisfactory evidence of God's interference in the affairs of men. On the contrary, it appeared to me, that one and all of the historical personages now named did just what they pleased, and that God took no account of their actions in this world, however He might deal with them in the next. They all seem to acknowledge *in words* that God governs the world; but, nevertheless, they appeared to me to *act* as if they were themselves independent and irresponsible governors, consulting only their own notions of what was right or wrong, and often pursuing what they considered to be their own interests, irrespective of God's asserted supremacy in human affairs. Most of them professed to believe in their accountability in the next world; but this belief seemed to me like a rope of sand in binding their consciences. They rarely hesitated to encounter all the dangers of that judgment, when their worldly interests or passions strongly solicited them to a course of action condemned by their professed creeds.

No answer yet found to the inquiry.

From infancy, I attended regularly an evangelical church, was early instructed in the Bible, and in the Shorter and Larger Catechisms, and the Confession of Faith of the General Assembly of Divines at Westminster, and read orthodox sermons and treatises by various distinguished authors. In the Old Testament, I read narratives of God's government of the Jewish nation, by the exercise of special acts of supernatural power, and understood this as a clear and satisfactory exposition of Divine government. In the New Testament, also, certain special acts of Divine interference with the affairs of men were recorded, which likewise gave me great satisfaction, as evidences that God governs the world; but I never could apply these examples to practical purposes.

His Religious education, as answering it.

I learned, in some way, which I do not now recollect, that during many ages after the close of the Scripture records, the Roman Catholic priesthood had asserted that such acts of special supernatural administration continued, and that they themselves were the appointed instruments through whose medium it pleased God thus to manifest his power. But I never *saw* instances of this kind of government in my own sphere of life. In the course of time, I read

The claims of the Churches give no answer.

arguments and criticisms which carried with them an irresistible conviction that these pretensions of the Roman Catholic priesthood had been pious frauds practised on an ignorant and superstitious people. Here, then, was another shock to my belief that God governs the world; and the difficulty was increased by an obscure impression, that notwithstanding this denial by the Protestant divines of the continuance of a special supernatural Providence acting through the Roman Catholic priesthood, they and their followers seemed to admit something very similar in their own favour. As, however, I could not discover by observation satisfactory evidence of special acts of Divine interference in human affairs, taking place in consequence of *their* solicitations, any more than in consequence of those of the Roman Catholic priesthood, I arrived at the conclusion that all special acts of Divine administration had ceased with the Scripture times; and thus I was again sent adrift into the great ocean of doubt, and no longer saw traces of the *manner* in which God governs the world in our day, whatever He might have done in the days of the Jewish nation.

His Theological studies, in relation to it.

As I advanced in understanding, my theological studies rather increased than diminished these perplexities. I read that "not a sparrow falls to the ground without our heavenly Father," and that "the very hairs of our heads are numbered," which seemed to indicate a very intimate and minute government of the world. But, simultaneously with this information, I was taught that God forgives those who offend against his laws, if they have faith in Jesus Christ and repent; and that He often leaves the wicked to run the course of their sins in this world without punishing them, reserving his retribution for the day of judgment. This seemed to me to imply, that God really does not govern the world in any intelligible or practical sense, but merely takes note of men's actions, and commences his actual and efficient government only after the resurrection from the dead.

Natural Theology proves the fact, but not the *mode*.

On the other hand, when still a youth, I read "Ray on the Wisdom of God in Creation," and subsequently "Paley's Natural Theology," and these works confirmed my faith that God does govern the world; although, owing to my ignorance of science, they rather conveyed an impression of the fact, than enabled me to perceive the *mode* in which He does so. As, however, I never saw any person *acting* on that faith, it maintained itself in my mind chiefly as an impression; and not only without proof, but often against apparent evidence to the contrary. My course of inquiry, therefore, is still onward; and with a view to obtaining a solution of the oblem, I studied a variety of work on moral and metaphysical bjects; but from none of them did I receive any satisfaction. point of fact, I reached to man's estate with a firm faith that God verns the world, but utterly baffled in all my attempts to discover *w* this government is effected.

His Scientific studies, in relation to it.

This feeling of disappointment became more intense, in proportion a succession of studies presented to my mind clear and thoroughly nvincing evidence, that, in certain departments of nature, God does questionably govern the world. When, for example, I comehended the laws of the solar system, as elucidated by Copernicus, alileo, Newton, and Laplace, and perceived the most perfect laptation, harmony, and regularity pervading the evolutions of the anets and their satellites, the conviction that God governs in that stem was at once irresistible, complete, and delightful. But the anets were far away, and I longed to discover the same order and rmony on earth; but in vain.

Anatomy, &c., shed some light.

My next study was Anatomy and Physiology. From this source, w light broke in upon my mind. When I saw and understood the echanisms for the circulation of the blood, the nutrition of the dy, the motions of the limbs, and the execution of the functions vision, hearing, and smelling, again the conviction became intense at, in the constitution of the human body also, God's agency is early discernible: But then came the puzzling question,—Why, if ch be the case, does God abandon this mechanism, after He has so quisitely made it? That he does forego all subsequent care of it, en appeared to me only too obvious; for around me I saw disease, d pain, and death, and multitudinous evils, all arising from this echanism becoming impaired in its structure or disordered in it nctions.

Surgery sheds more.

Nevertheless, some facts transpired which seemed in contradiction this supposed abandonment of the machine by its Author. I was ld, for example, that every tissue of the body had received a conrvative, and also a reparative power; that, in virtue of the former, resists, up to certain limits, external injurious influences; and that, hen those limits have been passed and the structure has actually en invaded, a process of reparation commences, the natural issue which is restoration of the injured part. The granulation of flesh ounds, and the re-integration of broken bones, afford familiar amples of this process. In these instances, the wisdom, goodness, d power of God appeared actually woven into the texture of our frames. His government of our corporeal structure seemed so complete, that every muscular fibre, and every filament of nerve, obeyed his mandate throughout our lives; and not only, when in health, performed precisely the function which He had assigned to it, but, in disease, brought into active play powers which He had provided for the emergency, and which, although incomprehensible to human intelligence, entered on their protective and recuperative functions at the very moment when their agency was wanted.

Clear, however, as this example of Divine government appeared to be, I found no application made of it beyond the domains of surgery. No practical inference was deduced from it, to regulate human conduct in the ordinary circumstances of life. When I left the medical school, all traces of the government of God in the world were lost, and my feeling of disappointment returned.

Chemistry adds largely to it.

Chemistry was the next science which engaged my attention, and it presented extraordinary illustrations of Divine government in the qualities and relations of matter. In the revelations made by this science, I discovered powers conferred on matter capable of producing the most stupendous results, yet all regulated in their action with a degree of precision that admitted even of mathematical and arithmetical measurement. In their reciprocal relations, I perceived an extent, variety, and wisdom of adaptation that captivated the understanding, and roused the most vivid emotions, as if of a present Deity. It is difficult to describe the effect which the first scientific demonstration of the chemical law in virtue of which water, when in the act of freezing, loses a portion of its specific gravity, and, in its form of ice, floats on the surface of the pool, produced on my intellect and moral sentiments. The adaptation of this quality to the preservation of the beings which inhabit the water, and to the due limitation of the influence of frost on the physical creation—the efficacy, simplicity, and unerring certainty of the means, contrasted with the vastness of the end accomplished—appeared irresistibly to proclaim the all-pervading God. Yet, when I left the chemical laboratory and returned into the world of business, these delicious visions fled, and I could no longer trace the Divine government in the affairs of men.

The true solution begins to dawn also, in Commerce;

In this condition of mind, I continued for several years, and recollect meeting with only two works which approached to the solution of any portion of the enigma which puzzled my understanding. These were Smith's "Wealth of Nations," and "Malthus on Population." The first appeared to me to de-

The true solution begins to dawn also, in Commerce;

monstrate that God actually governs in the relations of commerce; that He has established certain natural laws which regulate the interests of men in the exchange of commodities and labour; and that those laws are in harmony with the dictates of our moral and intellectual faculties, and wisely related to the natural productions of the different soils and climates of the earth.

But in my early days, I found the truth and utility of Smith's doctrine to be stoutly denied by Parliamentary leaders and practical merchants; in short, by everybody, except a small number of thinking but uninfluential men. With this exception, our rulers, merchants, manufacturers, and even our divines, concurred in treating Dr Smith's alleged discovery, that the relations of commerce are governed by natural laws instituted by God, as an idle dream; they pursued measures directly opposed to the principles which he taught as characterising that government, and they confidently expected to reap a higher prosperity, from following the dictates of their own sagacity, than from obedience to that wisdom which Smith represented as Divine. I perceived, indeed, that they were constantly disappointed in their expectations, and that the more they opposed the free intercourse of nations, the more their commercial prosperity was impeded; but all influential men thought otherwise, and these lessons led only to new experiments on their own principles—still avoiding most scrupulously every approach to the views advocated by Dr Smith.

And in regard to the laws of Population.

I first read the work of Mr Malthus, in 1805, and he appeared to me to prove, that God reigned, through the medium of fixed natural laws, in another department of human affairs—namely, in that of population. The facts adduced by Malthus demonstrated to my mind, that the Creator has bestöwed on mankind a power of increasing their numbers much beyond the ratio of the diminution that, in favourable circumstances, will be caused by death; and, consequently, that they must either, by ever-extending cultivation of the soil, increase their means of subsistence in proportion to their numbers, or expose themselves to the evil of having these restricted by disease and famine, to the amount which the actual production of food will maintain. These propositions, like the doctrines of Adam Smith, met with general rejection; and their author, far from being honoured as a successful expounder of a portion of God's method of governing the world, was assailed with unmitigated abuse, and his views were strenuously resisted in practice. Nevertheless, I saw clearly, as time wheeled its ceaseless course, that the results of human conduct corresponded with Mr Malthus's annunciations; and that his opponents, who governed the United Kingdom according to their own maxims, were never able to screen the inconsiderate poor, who reared families without securing for them adequate means of subsistence, from the evils which he had pointed out as inseparably connected with their erroneous principles of action.

Bishop Butler throws a flash of light.

Bishop Butler also threw a flash of light across the dark horizon; but it was only a flash. He announced clearly the great principle of a moral government of the world by natural laws; but he threw little light on the *means* by which it is accomplished. In consequence of his not understanding the means, his views in regard to the Divine government of the world, although in the main sound, are not practical. He was compelled to resort to the world to come, in order to find compensation for what appeared to him to be imperfections in the moral government of this world, in some instances in which a more minute knowledge of the mode of God's present administration would have convinced him, that the apparent imperfection is removable on earth.

The principle now arrived at.

During the continuance of these perplexities, this consideration presented itself to my mind,—that, in every department of nature, *the evidences of Divine government, of the MODE in which it is administered, and of the laws by which it is maintained, become more and more clear and comprehensible, in proportion to the exactness of our knowledge of the objects through the instrumentality of which it is accomplished.* Wherever we are altogether ignorant of the *causes* of phenomena, or where our knowledge of them is vague and general, confusion seems to reign; while intimate knowledge uniformly reveals order and harmony,—in other words, action characterised by the regularity of law. Moreover, I observed that, in the physical creation, order is maintained and an efficient government realised, by the endowment of every object with certain definite forces, which it displays with undeviating regularity, so long as its circumstances continue the same; and by the adjustment of the action of each of these forces to that of all the others with which it is connected. The balanced centripetal and centrifugal forces of the planets, for instance, produce their revolutions round the sun, and, at the same time, preserve them in their places. These endowments and adjustments of material substances forcibly convey to the human mind the impression of government and order, instituted and maintained by a Being superior to man.

The following questions next presented themselves for solution:—Why should the traces of Divine administration become obscure in the *Moral* department of creation? Why should we be so deeply in the dark concerning the laws according to which life, health, talents, dispositions, and individual and social happiness, are dispensed to man? It appeared to me that these questions might best be answered by asking others. Do we know intimately the causes which produce health and disease? These must regulate the endurance of life. Do we know the causes which give rise to the different dispositions and capacities of men? These must be eminently influential in determining their individual lots. Do we know the precise social effects which these dispositions and capacities are fitted to produce, when permitted, in the case of each person, to act blindly, to act under false or imperfect information, or to act under a clear and correct knowledge of the real nature and relations of things? On the extent of this knowledge, will depend our capacity to discern the causes of social happiness or misery. Do we know whether these causes and effects, whatever they may be, are subject, to any extent, to human control? And if so, how we may control them? If they are not subject to man's jurisdiction, do we know whether he has it in his power to modify, in any degree, his own conduct, in relation to their agency, so as to diminish the evil or increase the good which they are calculated to produce?

The questions still requiring answer.

To nearly all of these questions only a negative answer could be given; and I suspected that, in this ignorance, lay the grand obstacle to the discovery of the *mode* in which God governs the organic and moral departments of creation: but time rolled on, and no new light appeared.

The reason of no answer.

Hitherto, probably, I have succeeded in carrying the mind of the reader along with me; for many persons may have experienced doubts and difficulties similar to those now described: but, from this point forward, I fear that greater differences may arise between him and me. The facts on which the view to be now stated is founded have not hitherto been generally investigated with that seriousness and patience which are indispensable to their successful study; and hence their reality, and the importance of the lessons which they teach, are not appreciated. Nevertheless, long-continued and dispassionate observation having convinced me of their truth, and of the inestimable value of the consequences which flow from them, I proceed to describe, in a few words, the means by which these clouds of darkness were at length partially dispelled from my mind, and the moral horizon of the world, in some degree, cleared up to my mental vision.

A new principle discovered.

In the course of time, I became aware of the importance, in relation to this question, of certain facts which were previously generally known, but from which no practical conclusions had been drawn in regard to the mode in which God governs the world. These were, that the Creator has conferred on man a system of organs of respiration; a heart and blood-vessels; a stomach and other organs of nutrition, and so forth; that to each of these He has given a definite constitution; that He has appointed definite relations between each of them and all the others, and between each of them and the objects of external nature; *that life and health accompany the normal and harmonious action of the whole; and that disease, pain, and premature death, are the consequences of their disproportionate and abnormal action.* Moreover, I saw that God had given to man faculties which enable him to observe, understand, and act according to the laws which regulate the functions of those organs.

The true mode of investigating the principles sought.

From that time, the idea began to dawn on my mind that the study of the structure, functions, relations, and laws of these vital parts, *is the true mode of investigating the principles according to which God dispenses life, health, disease, and death in this world;* in other words, *the mode in which He governs this department of creation.* In maturing this idea, my late brother, Dr A. Combe, was my constant coadjutor and guide.[1]

It is unnecessary to carry the history of these personal difficulties farther. Let us now endeavour to bring this idea itself to the test of observation and reason. With this view, we may select the endurance of life as the subject of our consideration.

This proved by the statistics of Mortality.

That the endurance of life is governed by regularly operating laws, becomes obvious from the records of mortality. The records of burials kept in the different countries of Europe present striking examples of uniformity in the number of deaths that occur at the same ages in different years. So constant are these results, while the circumstances of any country continue the same, that it is possible to predict, with nearly absolute certainty, that in England and Wales, of 1000 persons between the ages of 20 and 30, living on the first day of January in any one year, ten will die before the first day of January in the next year.[1]

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[1] See very interesting and instructive details of the studies of the two brothers in this direction, in George Combe's admirable "Life and Correspondence of Dr Andrew Combe" (Edinburgh: Maclachlan and Stewart), than which no better book could be put into the hands of young men and women.

The problem stated:
Is the system one of Fatalism?

Uniformity in the numbers of events bespeaks uniformity in the causes which produce them; and uniformity in causes and effects constitutes the fundamental idea of government by natural laws. If, then, these deaths do not occur arbitrarily or fortuitously, but result from regularly operating causes, the following questions present themselves for solution:—Are these causes discoverable by human intelligence? If they are so, can that intelligence modify them? If not, can an individual adapt his own conduct to their operation so as to influence their effects? These questions are important equally in a religious and a practical point of view. If the causes are constant and inscrutable, and their effects irresistible, it follows that, in regard to death, we are subject to a sublime and mysterious fatalism; in short, that the Mahometan doctrine on this subject is true. If, on the 1st day of January in any one year, a thousand youths, in the vigorous period of life, know, with nearly positive certainty, that ere the clock strikes twelve on the night of the 31st of December, ten of their number will be lifeless corpses; and if, nevertheless, not one of them be able to discover who are to be the victims, or to employ any precautions to avert the blow from himself,—what is this but being subject to a real fatalism?

Or of regular Causation?

If, on the other hand, the causes *are* discoverable, and if the individuals subject to their influence possess also the power of modifying them, or of accommodating their own conduct to their action, and of thereby changing their influence on their own condition for good or evil, the Divine government will present a widely different aspect. Instead of a system of mysterious fatalism, it will be one of causation, regular in its action, scrutable in its principles, designedly adapted to the physical, moral, and intellectual nature of man, and as such presented to him for the cognizance of his intelligence, the respect of his moral feelings, and the practical guidance of his conduct. In discovering the causes of the ten deaths and their modes of operation, we shall acquire a knowledge of the principles on which God administers life and death to men at the age between 20 and 30. We shall obtain a glimpse of the order of God's secular providence in this department of his kingdom. If this view be erroneous, there appears to be no alternative to the conclusion that, in regard to life and death, we are the subjects of a fatal despotism. Let us inquire, then, whether the causes be scrutable, and whether human power is capable of modifying their influence.

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[1] I have selected the example of deaths from ages between 20 and 30, because, as will afterwards be shown, during this interval the conditions of life seem to be to a great extent under human control. In later periods, from 70 to 80, or 80 to 90, they are not so. The human frame then obeys the law of its constitution—it decays and dies; but it does so under no inscrutable law. The causes of its decay are palpable, and the effects are obviously designed. The individual who suffers has then no duty but submission to the will of the Being who conferred life on him at first as a gratuitous boon, and who is entitled to withdraw it, when the objects for which it was given have been accomplished.—(G. C.) The average of deaths between 20 and 30, in England and Wales, in 1853, was about 7·4 in 1000. George Combe wrote in 1848.

The Senses governed by regular laws.

If we desire to know by what laws God governs the sense of hearing,—that is to say, under what conditions He bestows this boon upon us, and continues it with us,—we shall best succeed by studying the structure and modes of action of the ear, and examining its relations to the air, to the constitution of sonorous bodies, to the brain, and also to the digestive, respiratory, and circulating systems of the body, on the action of which the sense of hearing indirectly depends. It is no abuse of language to say that, in studying those details, we should be studying the conditions under which, within certain limits, we may retain, forfeit, improve, or impair the sense of hearing, pretty much at our discretion. In the structure, the functions, and the relations of the ear, we should discern the manifestations of God's power and goodness, and a clear exposition of the principles on which He administers this sense. In the means by which we are permitted, within certain limits, to destroy or to preserve, to impair or to invigorate our hearing, we should discover the evidence of His government not being a despotism or a fatalism, but a system of regular causation adapted to our constitution and condition, and presented to us for the investigation of our intelligence, and the guidance of our conduct. In the constitution of the sense and the appointment of its relations, which man cannot alter, God's sovereignty is made apparent. By connecting certain beneficial consequences with the actions done in accordance with that constitution and those relations, and certain painful consequences with actions done in discordance with them, which consequences also man cannot alter, the Divine Ruler preserves His own sway over the sense and over all who possess it; while by endowing man with intellect capable of discovering that constitution and its relations, with religious emotions enabling him to respect it, and with power within certain limits to act in accordance or discordance with it, and thereby to command the favourable or the adverse results at his own pleasure, human freedom is established and guaranteed; and man appears as a moral, religious, and intelligent being, studying the will of his Creator in His works, worshipping Him by conforming to His laws, and reaping the rich rewards of enjoyment destined to him as the consequences of his fulfilling the objects of his being. By those means the Divine government is maintained simultaneously with man's freedom.

The same propositions may be predicated in regard to all the senses.

The same true of the whole body.

The question next occurs, Does this mode of government stop with the senses? It appears to me not to do so, but to extend to every organ of the human frame. As already observed, God has bestowed on man lungs, and other organs of respiration; a heart, and other organs of circulation; a stomach, and other organs of nutrition; a brain and nervous system, which are the organs of thought, sensation, and will: to each of these He has given a definite constitution, and he has appointed definite relations between each of them and all the others, and between each of them and the objects of external nature. These constitutions and relations have been established with design, viz., the design of conferring on man life and health, until he shall reach the age of threescore years and ten. They have been framed and appointed by Divine wisdom and intelligence; and every part of them operates with undeviating regularity. Life and health, then, are the result of the normal and harmonious action of the whole of them; disease, pain, and premature death are the consequences of their disproportionate and abnormal action.

Now, no reasonable doubt can be entertained, that man has received from his Creator faculties of observation and reflection, which, when assiduously employed, render him capable, to a constantly increasing extent, of observing, understanding, and acting in conformity with the constitution, functions, and relations of these organs, and thereby securing the enjoyment of life and health; but, if he choose, he may neglect them, and suffer pain, disease, and premature death. Hence it seems to follow, that God has revealed to man the laws according to which He dispenses life and health; and actually invited him to take a moral and intelligent part in acting out the scheme of His providence for his own advantage.

The same reasoning applied to Mortality.

The practical conclusion which I draw from these considerations is, that an intelligent individual who should know the structure, and functions, and laws of health of the vital organs of the human body, —the quality (*i.e.*, whether strong or weak, sound or diseased) of the constitution which each of the thousand persons had inherited from his progenitors,—and the moral and physical influences to which each should be subjected, could predict with a great approximation to accuracy, *which* of the thousand would die within the year. If this view be correct, the ten deaths in the thousand, which, in the present circumstances of social life, appear like the result of a fatal fiat, would become merely the exponent of the number of individuals in whose persons the conditions of health and life had *de facto* been so far infringed as to produce the result under consideration; without necessarily implying either that these conditions are in themselves inscrutable, or that the course of action which violates them is unavoidable. The sway of fatalism would disappear, and in its place a government calculated to serve as a guide to the conduct of moral and intelligent beings would be revealed;—a government of which causation, regular in its action, certain in its effects, and scrutable in its forms, would constitute the foundation.

Mortality regulated by Causation.

Moreover, it would follow from this view, that in the administration of God's secular providence in consigning ten individuals out of the thousand to the grave, and leaving nine hundred and ninety alive, as little of favouritism as of fatalism is to be discovered. The only sentence which each individual would find recorded regarding himself would be, that he must either obey the conditions of health, or suffer the consequences of infringing them.

It may be objected, that it is impossible for any one individual to acquire all the requisite information; but this objection is foreign to the question. The real point at issue is, whether, if our instruction were directed by a just appreciation of these principles, it would be possible for an intelligent person between 20 and 30 years of age, to acquire from his parents, his teachers, his medical advisers, books, and his own observation and experience, a knowledge of the conditions of life and health *in relation to himself?* and whether, if instructed in them, and trained from infancy to venerate and observe them as Divine institutions, and supported in doing so by social manners and public opinion, he could then, in an adequate degree, comply with the conditions, and escape from the supposed fatal list? I can perceive no reason for answering in the negative. If, in the first hundred years after the members of any community began to act on those principles, one individual in the thousand could escape from the list, and reduce the mortality to nine, the principle would be established; and the question in subsequent centuries would be only how far this knowledge and obedience could be carried.

The statistics of Mortality prove the principle correct:

(1.) As to the general death-rate;

In point of fact, the records of mortality *prove* that the view now stated correctly represents the principle on which the continuance of life is administered by the Divine Ruler of the world. When read in connection with history, these records show that if the intelligence, morality, industry, cleanliness, and orderly habits of a community be improved, the result will be an increase in the duration of life in that people. Thus, in 1786, the yearly rate of mortality for the whole of England and Wales was 1 in 42: or, in other words, 1 out of every 42 of the whole inhabitants died annually. In the Seventh Annual Report (p. 19) of the Registrar-General, it is stated that the rate of mortality for the whole of England, on an average of 7 years, ending in 1844, was 1 in 46.[1] Allowing for some errors in the earlier reports and tables, the substantial fact remains incontestible, that the average duration of human life to each individual is increasing in England and Wales, and from the causes here assigned.

Moreover, Professor Simpson, in a recent pamphlet on the value and necessity of the statistical method of inquiry as applied to various questions in operative surgery, presents direct evidence in support of the proposition which I am now maintaining.

(2.) As to the deaths in childbed;

The following table, he says, calculated from the bills of mortality of London, demonstrates statistically, that, in consequence of improvements in the practice of midwifery (and I should say also, in consequence of the improved habits and condition of the people), the number of deaths in childbed in that city in the 19th century was less by one-half than that which occurred in the 17th century. The table is the following:—

Average number of Mothers dying in childbed in London from 1660 *to* 1820.

YEARS.	PROPORTION OF MOTHERS LOST.
For 20 years ending in......1680......	1 in every 44 delivered.
For 20 years ending in......1700......	1 ... 56 ...
For 20 years ending in......1720......	1 ... 69 ...
For 20 years ending in......1740......	1 ... 71 ...
For 20 years ending in......1760......	1 ... 77 ...
For 20 years ending in......1780......	1 ... 82 ...
For 20 years ending in......1800......	1 ... 110 ...
For 20 years ending in... ..1820......	1 ... 107 ...

It is probable that, in the earlier years included in this table, the records were more imperfect than they were in the later years, and that the difference of the mortality is in consequence exaggerated; but, again, making every reasonable allowance for errors and omissions, the grand result is still the same, a diminution of deaths from a more rigid conformity to the conditions according to which the Ruler of the world dispenses the boon of life.

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[1] In 1853, the rate of mortality for England and Wales was 1·26 per cent., or 1 in 79.

(3.) As to different social classes;

Further,—the records of mortality, when arranged according to the different classes of society, and different localities of the same country, indicate the soundness of the same principle. The following results are presented by a report of the mortality in Edinburgh and Leith for the year 1846 :—

The mean age at death of the 1st class, composed of gentry and professional men, was	43½ years.
The mean age at death of the 2d class, composed of merchants, master-tradesmen, clerks, &c., was .	36½ years.
The mean age at death of the 3d class, composed of artizans, labourers, servants, &c., was	27½ years.

It is a reasonable inference from, although not necessarily implied in, this table, that the 3d class furnished a larger proportion of the ten deaths in the thousand persons between the ages of 20 and 30 than the 2d, and this class a larger proportion of them than the 1st; and, as God is no respecter of artificial rank, that the differences in the proportions were the result of the individuals of the 1st and 2d classes having fulfilled more perfectly than those in the 3d, the conditions on which He proffers to continue with them His boon of life.

(4.) As to different districts.

Again, Mr Chadwick testifies that "while one child out of every ten dies within the year at Tiverton—and one-tenth is the average of the county—one in five dies at Exeter," in consequence of deficient sewerage and improper habits in the people. The reports of the Registrar-General of England afford overwhelming evidence of a similar kind.[1] The same conclusion follows from these facts—that life is administered according to regular laws, which the inhabitants of some localities obey to a greater extent than those of others :—in other words, that a knowledge of the causes which favour the endurance of life, and of those which produce disease and death, is an acquaintance with the order of God's providence in this grand department of the government of the world. And if this be the case, can we doubt that the relations of cause and effect, in virtue of which life is preserved, and death ensues, were rendered by God cognisable by the human understanding, with the design of serving as guides to human conduct?

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[1] See striking corroborative statistics on Mortality, in *Chambers' Encyclopædia*, under Vital Statistics, Mortality, and Sanitary Science.

The same principle applied to the Moral world.

The suggestion here presents itself, that as an intimate knowledge of the structure, functions, and laws of the vital organs of the body, is apparently the true key to the right understanding of the order of God's secular Providence in dispensing health and life, and disease and death, to individuals,—it is possible that, in like manner, an intimate acquaintance with the functions, relations, and laws of the faculties of the mind, may open the path to the discovery of the mode in which the Divine government of the *moral* world is conducted.

The Moral government of the world defined.

By the Moral government of the world, is meant the control and direction maintained by the Divine Ruler over human actions, by means of which He leads individuals and the race to fulfil the objects for which He instituted them. The problem is to discover the *manner* in which this government is accomplished.

Not by supernatural interference.

Our ancestors in the 17th century believed this government to be conducted by special acts of supernatural interference, on the part of God, with human affairs. Science has banished this idea, and has substituted in its place the notion, that the moral world also is governed by natural laws; but it has made small progress in unfolding what these laws are, and how they operate. The consequence is, that, at this moment, even enlightened men have no systematic or self-consistent notions concerning the *mode* in which the Divine government of the moral world is conducted. They acknowledge in words, that there *is* a Divine government in the moral as well as in the physical world, and that it is by natural laws; but here they have stopped, and most of them are silent concerning the *mode* of that government. In consequence of the exclusion, effected by science, of the notion that special acts of Divine interference now take place in human affairs, the religious teaching founded on that principle has become effete. It has not been formally given up, but it is no longer of practical efficacy. Hence, we are, at this moment, really a people without any acknowledged, self-consistent, satisfactory, or practical notions concerning the moral government of the world; in other words, concerning the order of God's providence in governing the actions of men, and educing from them the results which He designed.

How is this deficiency to be supplied? Apparently in the same

The need of a Science of Mind to prove this government.

manner in which we have supplied our other defects of knowledge of the order of God's providence in the physical and organic kingdoms. Do we know intimately the machinery by means of which the government of the moral world is maintained and conducted? The answer must be in the negative. Have we any Science of Mind resembling in precision, minuteness, and certainty, the sciences of astronomy and chemistry? Monsieur De Bonald,[1] in words quoted by Mr Dugald Stewart, answers the question. "Diversity of doctrine," says he, "has increased from age to age with the number of masters, and with the progress of knowledge; and Europe, which at present possesses libraries filled with philosophical works, and which reckons up almost as many philosophers as writers; poor in the midst of so much wealth, and uncertain, with the aid of all its guides, which road it should follow;—Europe, the centre and focus of all the lights of the world, has yet its *philosophy* only in expectation."[2]

If the Science of Mind be as indispensable to our understanding the *manner* in which the Divine government of the moral world is conducted, as is the science of matter to our comprehending the order of that government in the physical world, and if Monsieur De Bonald's description of the condition of Mental Science be correct, there is no cause for surprise at the darkness which envelopes us in regard to the government of the moral world.

The reasons of ignorance in regard to it.

It is too certain that Monsieur De Bonald is in the right. For, although man has received a material body, has been placed in a material world, been subjected during his whole life to material influences, and can act on the external world only through the instrumentality of material organs: nevertheless, in the most esteemed treatises on the Philosophy of Mind, moral and intellectual faculties are described without mention of special organs, or of the influence of these in modifying the manifestations of the faculties; and without taking notice of the relation of each faculty and organ to the other faculties and organs, or to external objects. Here, then, a dark abyss of ignorance, apparently impassible, breaks off all practical knowledge of the connection of the body with the mind, and of the organs by means of which the mind acts, and is acted upon, by the external moral and physical creation. And if our knowledge of the order of God's providence can increase only with our knowledge of the *means* or *instruments* through which He administers it, are we to sit quietly down, and allow this state of ignorance to continue for ever?

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[1] De Bonald, born in 1753, died in 1840; a philosophical and political writer, author of *Recherches Philosophiques sur les Premiers Objets des Connaissances Morales*, *Theorie de Pouvoir Politique et Religieux*, &c.

[2] Stewart's Preliminary Dissertation to the *Encyclopædia Britannica*, vol. i., p. 230.—(G. C.)

The secret lies in the relation between Mind and its physical organs.

The cause why it has continued so long appears to me to be obvious enough. In a state of health, most men have no consciousness of the existence and interposition of material organs in thinking. They are conscious of thoughts and feelings, but not of organs; and people have been taught to ascribe all the phenomena of consciousness to *mind alone*. Consequently, they are offended with those who refer such phenomena in any degree to the influence of organs. Nevertheless, facts which are revealed by the most ordinary *observation*, show that our mental manifestations are influenced, at every moment of our lives, by the condition of the organs. The question then occurs, may not the key to a knowledge of the manner in which God governs the world of mind be found in the study of these organs, and their laws and relations? One point seems to be clear enough: namely, that if God *has* instituted mental organs, and ordained their functions, their constitution and laws must be adapted to the constitution and laws of all the other departments of creation; and that, therefore, a correct knowledge of the relations of the world of mind to the world of matter, must be unattainable while we remain in ignorance of the mental organs.

A knowledge of these organs, therefore, and their relations and laws, appears calculated at last to form a bridge across the abyss of ignorance which has hitherto concealed from our view the *manner* in which the Divine government of the moral world is conducted.

This proved by the statistics of crime:

(1.) In France;

Let us inquire, then, whether the system of Divine government before described stops with the inorganic and organic departments of creation, or whether it extends into the domain of mind. One of the most striking anomalies in the moral government of the world consists in the wide-spreading magnitude and frequency of crime. Is it possible to discover whence it arises? Is it a direct result of the institutions of the Creator, or does it spring from abuses of faculties that are in themselves good? Statistical inquiries into human conduct present the same striking indications of uniformity in results as do those into the endurance of life. Mons.

Quetelet furnishes us with the following table relative t France :—

Years.	Accused and brought personally before the Tribunals.	Condemned.	Number of Inhabitants for each person accused.	Number condemned out of each 100 accused.	Accused of Crime	
					Against the person.	Agains propert
1826	6988	4348	4457	62	1907	5081
1827	6929	4236	4593	61	1911	501
1828	7396	4551	4307	61	1844	555
1829	7373	4475	4321	61	1791	558
Total	28,686	17,610	4463	61	7453	21,23

"Thus," says Mons. Quetelet, "although we do not yet p statistical returns for 1830, it is highly probable that we for that year also, 1 person accused out of every 4463 in and 61 condemned out of each 100 accused. The p becomes less for 1831, and less for the succeeding years. the same condition for estimating, by the results of the past which we shall see realised in the future. This possibility ing beforehand the number of the accused and condemn should occur in a country, is calculated to lead to serious r since it involves the fate of several thousands of human be are impelled, as it were, by an irresistible necessity, to t the tribunals, and towards the sentences of condemnati there await them. These conclusions flow directly from the already so often stated in this work, that effects are in pro their causes, and that the effects remain the same if the cau have produced them do not vary."[1]

(2.) In Great Britain.

The same uniformity is observable in Great Britain. A the House of Commons, dated 22d May 1846, shows the persons committed to prison for each of seventeen different tions of offences, including robbery, housebreaking, arson rape, and so forth, for two different periods of five years while the offences were capital, and one after they had ce so punished. The result is the following :—

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[1] Sur L'Homme, &c., tome ii., p. 168.—(G. C.) This great lated by Dr Robert Knox of Edinburgh, has been published in a by W. & R. Chambers, under the title of "A Treatise on Ma D[illegible]nt of his Faculties," by M. A. Quetelet, with a special th

Number of persons committed for the foregoing crimes, during the five years immediately preceding the abolition of the punishment of death, ...	7276
Number of ditto, during the five years immediately succeeding the abolition of the punishment of death, .	7120

Do these facts prove fatalism?

The first aspect of these facts suggests the idea that fatalism is the inciple of government in the moral world also: and the questions ust again be solved—Whether the causes which produce these conunt results are scrutable by man? and if so, whether he is capable modifying them; if not, whether he is capable of adapting his nduct to their action in such a manner as beneficially to vary their sults? It is remarkable that, in all ages, lawgivers have acted on e principle that human volitions are absolutely free; for they have ectly forbidden certain actions, and enacted punishments against ose who committed them, without making any inquiry into the wer of their subjects to obey the law. Even in modern times, and the face of statistical returns such as those now quoted, showing a nstant succession of crimes only partially influenced in amount by e punishments inflicted, and proclaiming, with trumpet tongue, the istence of causes lying deeper than mere punishments can reach, e rulers of nations proceed in their course of assuming absolute edom. They proclaim the law, and inflict punishment for sobedience, irrespective of the mental condition and physical cirmstances of their subjects. They have partially succeeded in ecking crime, but they must confess also to much failure and dispointment. What, however, is the sound conclusion to be drawn om the facts before us?

They prove regularly operating causes.

The regularity observable in the numbers of criminals indicates the istence of regularly operating causes of crime. The first step in e investigation, therefore, must be to discover these. Several uses are generally recognised by reflecting men, such as, want of lucation, bad example, destitution, and so forth. These, however, not serve to account satisfactorily for the phenomena; for out of thousand persons all equally deficient in education, equally exposed bad example, and equally destitute, only a definite and constant umber (say ten) will become criminals, in any one year in which the ternal circumstances of all continue unchanged. This fact shows at the primitive causes of crime, be they what they may, affect me and not other individuals: and until we discover what these e, we shall never understand whether crime is a direct or a ntingent result of the Divine institutions; nor whether human intelligence is capable of modifying these institutions so as to diminish or remove it. Moreover, until we make this discovery, these causes although removable, must and will produce unvarying and constan results, as if they were the mere instruments of an overwhelming fatalism.

The solution involves the whole question of the Moral government of the world.

The solution of this problem extends far beyond the department o mere criminal legislation. It involves the whole question of God's government of the Moral world; of man's freedom, and of the nature of his responsibility in this world. If the common assumption, that the will of man is *absolutely* free, were founded in fact, then God could exercise no direct control over the moral world; for the control of a superior necessarily implies limitation of freedom in the servient agent. If, on the other hand, He exercises an inscrutable and irresistible sway, dooming thousands to commit crime, and to become the victims of the tribunals erected and administered by their more favoured brethren, every notion of a moral government of the world must be abandoned. On such a supposition, man could enjoy no freedom, and his only duty would be that of submission in despair.

Mind works only through physical organs and by natural laws.

I have already hinted at the causes why this branch of knowledge is involved in such apparently hopeless obscurity. The means by which the Creator conducts the moral administration of the world have been unknown, and hence His scheme of government could not be comprehended. If there be any part of the human system by means of which all the desires, emotions, and intellectual powers of man act, and are acted upon by external objects and beings: it appears to follow, that by studying its constitution, functions, laws, and relations, in the same spirit and manner as we do those of the ear, or the eyes, or the lungs, and with analogous objects in view, we may be able to discover the mode in which it has pleased God to govern the world of mind; and that then also we may be in a condition to judge whether the causes of moral actions in general are subjected to any natural laws, and whether the moral being himself can exercise any control over those laws, or modify their results by accommodating his conduct to their sway. If there be organs subject to natural laws, which subserve the action of all the mental powers of man, the Divine government may have its foundation in, and maintain its authority by means of, those organs and their relations; just as that government is maintained over health and life, through the medium of the laws to which the vital organs have been subjected. If man be capable of discovering those organs, of modifying them, or of accommodating his conduct to their action so as to vary their results; then will he, within certain limits, be a free and intelligent agent; and his responsibility will be established by the fact, that over the constitution, relations, and laws of the organs and faculties themselves, and the consequences of good and evil attached to the use and abuse of them, he will have no command; while, by choosing between obedience and disobedience, he will enjoy that kind of freedom which consists in selecting results.

The Mental constitution is adapted to the external world.

The constitution of the human mind appears to be adapted to such a system of things as is here supposed. Man has received animal propensities and moral sentiments, every one of which has a legitimate sphere of action, accompanied by enjoyment; while each may be misapplied, and thereby become an instrument of suffering. He has received also intellectual faculties enabling him to observe the qualities of things that exist, and reflecting faculties that enable him to perceive causation. These endowments would be absolutely unsuited to a sphere of being in which there was no fixed order of cause and effect. They presuppose regular causation; and in bestowing them, the Creator has obviously invited us to study the means by which He executes His secular providence and to accommodate our conduct to its laws. In submitting these means to our cognisance, He presents to us a practical revelation of the course of conduct which He desires us to pursue, in order to work out our own enjoyment in this world. Is it not true, therefore, that in the endowment of objects and beings with specific qualities and modes of action, which we cannot alter, God maintains his supremacy; while, in enabling us to discover these, and to modify our conduct in relation to them, He bestows on us all the freedom compatible with our subjection to the government of a superior Being?

Mind subject to organic laws.

It is of no consequence to the validity of this argument, in what part of the body the organs of the mind are situated. Their mere existence warrants the inference, that they serve as the media through which God maintains His government in the moral world. The reader, therefore, may, if he please, reject Phrenology as an idle dream, if he only admit that, in this life, the mind is not a disembodied spirit, but acts, and is acted upon, through the instrumentality of organs, the condition of which affects its powers of manifestation.

Let us assume, then, but only for the sake of illustration, that the brain is the instrument by means of which the mental faculties act, and are acted upon by the external world, and let us try to solve the problem of the moral government of the world by means of this

How the moral and intellectual worlds are subject to natural law.

hypothesis. Suppose that each primitive animal desire, moral emotion, and intellectual faculty is connected with a certain portion of the brain; and that (age, exercise, health, constitution, and all other things being the same) each organ acts with a degree of energy corresponding to its size. Suppose farther, that in ten individuals out of a thousand, the size of the animal organs in relation to the moral and intellectual is *plus*, and that, in the other 990, the balance of size is equal between these different groups of organs, or that it predominates in favour of the moral and intellectual,—we can easily comprehend that, in social circumstances in which stimulants are applied to all the faculties, the animal desires may be prone to attain a criminal ascendency in the ten individuals in whom their organs are in excess; in other words, that these may be the ten offenders in the thousand.

The same principle true of mental as of physical laws.

If all the organs, wherever situated, were instituted' by God; if the connection between their size, health, and other conditions, and the energy of their action—and also the subordination in authority of the animal to the moral,—were established by Him; if certain spheres of action were assigned by Him to each of them, and certain consequences attached to under-action, moderate action, and over-action,—also to action in accordance with the constitution of external objects and beings—and other consequences to action in discordance with that constitution: then it appears to me that a knowledge of these particulars will, to a certain extent, constitute information concerning the means by which God administers the moral and intellectual government of man.

The nature of man's freedom under these laws.

If, farther, we assume that man, without being able to alter the fundamental constitution and relations of any one of these organs, has, nevertheless, received faculties which enable him to observe and comprehend them, and to modify his conduct in relation to the consequences of their action, we should again have an example of human freedom existing within prescribed limits, combined with stable, regular, undeniable Divine government. Suppose, for example, an individual to exist, in whom the size of the animal organs so far predominated over that of the moral and intellectual organs, that, in ordinary circumstances, he could not avoid yielding to external temptation to vicious indulgences; still, if either he, or the society among whom he lived, possessed the knowledge of the cause of [illegible]vity to fall into crime, he himself, by changing his circums[illegible]hey, by doing so for him, might avert the crime, by with[illegible] from the temptation.

The principle applied to the lessening of Moral offences

According to this view, the tables of crime adduced by Mons. Quetelet and others, would indicate only the number of individuals whose mental organization is so deficient, or so unfavourably balanced, that they are unable to resist the external temptations to crime to which they are exposed; but would not warrant the conclusion, that the better constituted members of society, if they knew the peculiarities of that organization, and used all the means which that knowledge would place in their power to rescue the individuals from temptation, might not diminish the number of offenders and offences to an extent as yet unascertained.

The limits of a pamphlet do not allow me to enter on the consideration of acts of mere vice, imprudence, or folly; or to show their causes, and the nature of the consequences by which they are followed. This has, to some extent, been attempted in my other works[1]; and I can now only remark, that the principles here expounded apply to them all.

The conclus arrived at.

These illustrations are introduced merely to call attention to the proposition, that if there be now no special interpositions of Divine power in human affairs, it appears to follow, that the Divine Ruler must either govern through the constitution and laws which He has bestowed on the inorganic, organic, and moral elements of creation, or (in so far as man can perceive) not govern at all. Moreover, there appears to be no road open by which human intelligence can discover the principles according to which the Divine government proceeds, in administering the details of secular life, and can learn to act in accordance with them, except that furnished by the study *of the instruments through which it is accomplished.*[2]

2. THE TRAINING OF THE RELIGIOUS FACULTIES BY MEANS OF SCIENCE, OR THIS MORAL GOVERNMENT.

The application of these principles to education.

If the main idea here insisted on be sound, it will present Secular education in a new light. Instruction concerning the qualities, modes of action, and relations of sublunary things and beings, instead of being godless, will prove to be an exposition of the means by which God's secular providence is administered.[3]

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[1] See especially his "Constitution of Man," "Moral Philosophy," and "Thoughts on Capital Punishment."

[2] What should Secular Education embrace? pp. 1-26.

[3] "There obtains a certain close affinity between a taste for Science and a taste for Sacredness."—*Dr Chalmers in "Christian and Civil Economy of Large Towns,"* vol. iii.

The next question, however, is, Will this knowledge be of itsel sufficient to induce and to enable the young to regulate their conduc in accordance with the natural laws? Certainly not. The following desiderata will still need to be supplied.

Knowledge directly addresses the intellect alone; but the intellect is more the regulator than the source of active power. The latter comes chiefly from the propensities and sentiments. We must therefore train *all* the propensities and sentiments, under the direction of the intellect to act in harmony with the secular arrangements of God's providence.

The training of Veneration:

The sentiment of Veneration, for example, must be trained to respect, to hallow, and to obey, the laws prescribed for human conduct in the constitution of nature. This sentiment is distinct from the intellect, and may be led to regard almost any object as sacred. In ancient Egypt, it was trained to venerate reptiles; in ancient Greece and Rome, to reverence images as gods; in modern Roman Catholic Rome, to invest with sanctity the Pope; in Presbyterian Scotland, to venerate the Bible, and the clergy who expound it; but in no country with which I am acquainted, has it been trained to regard as sacred the order of God's Secular Providence revealed in nature.

Which may invest anything with a religious character;

The liability of this sentiment to take almost any direction given to it in youth, appears to me to explain the widely different responses which the religious consciences of men differently educated give to the same question. The Roman Catholic religious conscience regards it as sinful to eat flesh on Fridays; while the Protestant religious conscience considers this observance to be superstitious. In Scotland, the Protestant religious conscience considers it sinful to engage in any amusement or recreation on Sunday afternoon; while on the continent of Europe, the religious conscience, both Protestant and Catholic, generally views recreation on the Sunday evening as perfectly permissible.

And should be trained to view God's Secular Government as Sacred.

The inference which I draw from these and similar well-known acts is—that it is possible to invest almost any object or observance with a religious character, provided the sentiment of Veneration be trained in childhood and youth to reverence it, and be supported through life by the sympathy of public opinion in its favour.[1]

If this conclusion be sound, and if the secular arrangements by which God exercises His sovereignty in this world be worthy of the respect of His rational creatures, then it would be a legitimate and useful practice to present these arrangements to the young as objects of regard. When they had been trained to respect them, perhaps the knowledge thus hallowed might exercise some influence over their practical conduct.

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[1] See additional observations on this important point, in Part Third, chap. iii.

The same training should be given to Hope and Admiration;

There are other two sentiments belonging to the higher class of faculties which strongly influence conduct, namely, Hope, and Admiration of the wonderful, the great, and the good.[1] These are the fountains of trust, expectation, faith, and joy in believing. Experience proves that they are distinct from the intellect, and that, by early training, they may be directed to very different classes of objects and observances. I should propose, therefore, to present the order of God's secular providence, as revealed in nature, to these sentiments also, as objects worthy of regard, and should train them to see God himself revealed in His works. A child thus reared might, perhaps, when he grew up to man's estate, consider himself as exercising faith, trust, and confidence in God himself, when he yielded obedience to his laws; and he might be led even to believe that God would render the order of His providence conducive to good, however darkly and imperfectly this tendency might be discerned in some of its parts, by those of His creatures, who continued to be the ignorant slaves of prejudice and passion.

And to all the faculties.

It is impossible in a pamphlet to enter into a full exposition of this subject.[2] Suffice it to observe, that *all* the faculties should be trained in youth to respect and obey God's natural laws; and that I venture to hope for practical results only after this has been accomplished. The reader is requested to aim at grasping the *general idea* which is here expounded, irrespective of the completeness or perfect accuracy of all the details.

It will be objected, perhaps, by some individuals, that such a training of the moral and religious sentiments would be a complete desecration of them; that it would bind the free and immortal spirit in the trammels of material laws; render its actions and aspirations ever subservient to low calculations of secular good and

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[1] The latter is known phrenologically, in George Combe's system, as Wonder. "Veneration, Hope, and Wonder combined, give the tendency to religion; their abuses produce superstition."—*Introd. to "America,"* vol. i.

[2] See this subject of the Sacredness of Nature, or the Order of God's Secular Providence, and the training of the young to regard it as Sacred, treated of in full in George Combe's "Science and Religion," 5th edition, (Edinburgh: Maclachlan & Stewart.)

This is no desecration of the Religious entiments.

evil; and, in short, put an end to spiritual life, and all those inward communings of the soul with God, which constitute the grand sources of the enjoyment and consolation afforded by religion.

The answer to this objection is easily given. The education and training now proposed would leave every man free to follow the bent of his own inclinations, in regard to the whole spiritual kingdom and its interests and objects. The only effect of it would be, to place the religious emotions, and all the other faculties, under the restraints of God's natural laws, when they acted in sublunary scenes and dealt with temporal duties.

All the faculties are under natural law;

Farther, the religious sentiments are not singular in being fountains of inward light. *Every faculty* has its inward lights as well as they. An individual, for example, who has an active temperament and large organs of Acquisitiveness, is inspired by brilliant aspirations after unbounded wealth, and pictures to himself unlimited happiness in its attainment. But the modes of producing and attaining riches are really regulated by natural laws; and these will, in point of fact, determine his failure or success, whether he believes in their influence or not. To follow the inward lights of his Acquisitiveness, therefore, irrespective of these laws, is not to enjoy a rational freedom, but to yield to the blind impulses of an inferior propensity.

Including the religious emotions.

Similar remarks apply to the inspirations of the religious emotions. While their action is confined to the interests of eternity and the spiritual kingdom, the laws of that kingdom are their proper guides; but when they issue forth into the sphere of temporal objects, they come under the jurisdiction of the laws of God's secular providence, as certainly as the animal propensities themselves. They can accomplish no terrestrial good, except by conforming to these laws; while they must produce unequivocal evil whenever they transgress them. This view of the strict subjection of man to the order of God's secular providence is offensive to many religious persons; but it is so, in my opinion, only because, owing to the imperfections of their education, they either do not know the laws of that order, or have not been trained to reverence them as sacred.

When the structure and functions of the eye are studied in relation to the qualities and laws of light, an exquisite adaptation of the sense to external luminous bodies is discernible. The same observation applies to the ear and sonorous bodies; to the lungs and the respirable gases; in short, to every organ and function of the body, How scientific knowledge becomes religious.

with which we are sufficiently acquainted. No human sagacity, however, can yet predict the precise use of the spleen, and, in consequence, its adaptation to its objects is a mystery. It appears as an unmeaning mass, amidst objects resplendent with design.[1] Similar remarks apply to the brain. To many who have studied the functions of its different parts, there appears the same admirable adaptation of *them* to the external world, and to the order of providence embodied in the constitution of that world, as is recognised in the case of the organs before named. We discover organs and faculties of observation directly related to the qualities of external objects and beings; organs and faculties related to their phenomena; organs and faculties related to their agencies, and the consequences which they produce; and organs and faculties related to the interests of man as an individual, and as a social, a moral, and a religious being. On contemplating these endowments and relations, and the order of God's providence administered through them, the intelligent mind thrills with vivid emotions of love, gratitude, and admiration of their great Author. A "present Deity" is felt to be no longer a figure of speech, or a flight of poetry, but a positive and operating reality. We not only feel that we "live, and move, and have our being" in God, but become acquainted with the *means* through which His power, wisdom, and goodness affect us, and discover that we are invited, as His moral and intelligent creatures, to co-operate in the fulfilment of His designs. The beautiful exclamations of King David, "If I climb up into heaven, Thou art there; if I go down to hell, Thou art there also: if I take the wings of the morning, and remain in the uttermost parts of the sea; even there also shall Thy hand lead me, and Thy right hand shall hold me," become positive scientific truths; and man takes his true station as the interpreter and the administrator of nature under the guidance of nature's God.

The existing gulf between Science and Religion.

In the days of Lord Bacon, philosophers speculated and reasoned concerning the constitution of nature, without sufficiently observing its qualities and phenomena. He recommended to them to observe first, and to reason afterwards; and so thoroughly has this counsel been followed, that, in modern times, scientific reputations are built up almost exclusively on observations. Science has, perhaps, to too great an extent, fallen into the hands of men in whom the observing organs predominate over the reflecting; and it is now rather an exception than a rule, to see practical conclusions regarding what men should do or abstain from doing, drawn from even the most elaborate expositions of natural science. There is a gulf between science and daily life, and another between science and religion; and the schoolmaster, who, under an enlarged and enlightened view of the order of God's providence, should be the expositor of that order to the young, pursues his daily routine in comparative ignorance of his high vocation, and is humbly estimated and poorly requited by a society nearly as ignorant as himself.

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[1] More is known regarding the spleen since George Combe wrote in 1848. From certain chemical inquiries, it is now regarded as "a storehouse of nutritive material, which may be drawn upon according to the requirements of the system."

There should be no such gulf.

To those who are *not* acquainted with the functions of the different parts of the brain and their relations, this organ, like the spleen, still appears a mere unmeaning mass of matter lodged in the interior of the skull, and these views of its importance may seem to be a hallucination or a dream. But, as already observed, if they acknowledge the existence of mental organs at all, instituted by God, the conclusion appears to follow that those, wherever situated, are the direct instruments by means of which He exercises His secular dominion in the world of mind; and I hope therefore to be pardoned for the earnestness of this appeal in favour of the study of their functions.[1]

The Religious faculties may be directed towards the natural laws.

The religious sentiments are inherent in, and important elements of, the human mind. They act with great energy, and lead to stupendous consequences of good or evil, according as they are well or ill directed. It appears to me that they may with great advantage be directed towards the support and enforcement of God's laws written in the book of creation, as well as of those written in the Bible. This opinion is entitled to the greater weight, when it is considered that no law is laid down to man in the Bible for his guidance in temporal affairs which is not also inscribed in the book of nature; and that, in point of fact, it is the support which the scriptural precept receives from the agency of nature that renders it practical. The Scripture, for example, commands temperance in all things; and it can be demonstrated that, according to the laws of organization, intemperance in food injures the health; intemperance in drinking incapacitates the mind; intemperance in ambition blinds the understanding and leads to ruin; intemperance in study exhausts the brain and deranges the mental functions; and so forth. In my work on "The Constitution of Man," I have given illustrations of this doctrine; and in my Lectures on "Moral Philosophy," I have endeavoured to shew that the Ten Commandments are as clearly inscribed in the natural constitution of man, as they were on the tables of stone delivered to Moses; and these are only examples which might be multiplied to the full extent of scripture teaching relative to temporal affairs.

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[1] "Secular Education," p. 27-31, written in 1848.

Scripture is, and must be, supported by nature:

The principle now stated, that Scripture precepts regarding temporal duties cannot become practical unless supported by the order of nature, deserves consideration. It goes deep into the merits of Secular and Religious education. Suppose, for example, that the order of nature had connected health, mental energy, and temporal prosperity, with *intemperance*, and that the scriptural injunction "Be temperate in all things" had rested solely on the authority of Scripture, and its only sanction had been the announcement of eternal punishment as the *future* consequence of disregarding it,—what chance would the cause of temperance have had for success in this world? Obviously, very little. This conclusion is supported by the fact, that the plainest precepts of the Bible continue to this day to be utterly disregarded in practice by individuals and nations who believe unhesitatingly in their Divine authority, but whose understandings have not yet discovered that they are supported also by the order of nature.

Illustrated by the principles of Free Trade;

The precept, for example, "Love thy neighbour as thyself,"—"all men are thy neighbours,"—directly involves the principles of free-trade[1]; but its practical application in this form was resisted, and continues to be resisted, by individuals and nations who admit its Divine authority, but do not yet perceive how this application of it can be rendered compatible with their temporal welfare. The "League"[2] succeeded in having it carried into practical effect, only by convincing the English people that the order of nature was such that they might safely obey the precept, not only without temporal injury to themselves, but with positive advantage. Then, and not till then, they yielded obedience to what the Scripture had commanded them to do for eighteen hundred years, but commanded them in vain.

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[1] See this proved more or less in works on Social Science, but especially in George Combe's "Moral Philosophy," and William Ellis's works on Social Science, enumerated Part Second, chap. vii. 4.

[2] The memorable Anti-Corn-Law League, constituted on the 20th March 1839, for abolishing the restrictive and obnoxious Corn Laws—a great organisation for educating the country in the principles of Social Science, and in the truth that our duties to ourselves involve our duties to others—which issued in the abolition of the Corn Laws and the establishment of Free Trade, in 1846. George Combe wrote in 1846, just after the passing of the Act.

And resistance to injury.

As a contrast, I may notice the scriptural precepts, "I say unto you, that ye resist not evil; but whosoever shall smite thee on thy right cheek, turn to him the other also; and if any man will sue thee at the law, and take away thy coat, let him have thy cloak also," (Matthew, v. 39, 40.) The constitution of the human mind does not sanction these precepts when understood in their literal sense. Nature has bestowed on us a love of life, and a sentiment of self-respect, which render injuries and insults disagreeable; she has added sentiments of Benevolence, Veneration, and Conscientiousness, which proclaim that the infliction of injury and insult is wrong; but, as she foresaw that some men might disregard these moral restraining powers and become aggressive, she added Combative and Destructive propensities to the mind, one of the legitimate uses of which is to repel, by force, unjust attacks on our persons and our rights. The law of nature, therefore, is, that injury and insult *must be restrained*,—by moral influence if possible, but if not, by physical force; and, accordingly, the words of Scripture have been practically thus interpreted, and those sects who have endeavoured to act on their literal meaning have not succeeded in commending their principles of non-resistance to general acceptation.

The young should be trained to regard these Natural Laws as Divine Institutions.

If the constitution and arrangements of nature in which our secular duties are inscribed, and by means of which they are enforced, were presented to the understandings of the young as Divine institutions, and if their sentiments of Wonder, Veneration, and Conscientiousness, were trained to admire, reverence, and obey them, these duties would, in their minds, become *principles of religion*, as well as of morality and prudence. Their practical efficacy would be increased by the combined forces of the understanding, of the moral sentiments, of the religious sentiments, and of the selfish principles of our nature, all co-operating; for, when all these were satisfied in regard to their Divine authority and practical utility, they would naturally unite towards their enforcement. No doctrines or precepts, relative to secular duties, that rest upon and are addressed to the religious sentiments exclusively, or even chiefly, can operate with an equally powerful and beneficial effect. If they do not satisfy the understanding, or the moral feelings, or the selfish elements of the mind, they lose in practical efficacy, in proportion to the faculties which they leave uninterested. The Christian religion abounds in precepts which rest on all these foundations, and hence its practical power. The superstitions of the ancient world, and of modern heathenism (however deeply they may excite and interest the religious sentiments of their votaries), fail to satisfy the understanding and the moral sentiments, and to promote the temporal happiness of those who believe them; and hence their practical inefficacy for good. They are disowned by nature, and cannot yield the fruits of purity, prosperity, and peace.

So far, therefore, from the Divine laws in regard to secular rights and duties having their only foundation in Scripture, the proposition should be modified to the effect, that they have a foundation also in nature, and that it is their conformity to, and enforcement by, the order of nature, which renders them practical; and this seems to authorise the conclusion, that the State has a right to teach to all its subjects the order of nature on which human happiness depends, and by which the practical doctrines of Scripture are supported and enforced.[1]

Religion cannot improve man's condition unless by Natural Law.

I ask, does a knowledge of the constitution and laws of nature bear any logical or rational relation to the end we aim at accomplishing—the improvement, physical and mental, personal and social, of the people? I maintain that it does; nay, I go farther, and venture to affirm that this knowledge is *the* way appointed by God to accomplish the purpose in question, and that without it, religion never can become practically and extensively efficient in improving man's condition on earth. I limit myself to earth, because, with the efficacy of the various creeds of Christendom as means of spiritual advancement in relation to a future state of existence, I have here no concern. I treat them all with respect, and leave every sincere inquirer to form his own conclusions concerning their merits. But I repeat, that, in reference to personal and social improvement, religion severed from the laws of nature stands in the same predicament as pure mathematics do when they are unapplied to practical objects. Ask the profoundest mathematician who had never studied navigation, or served on board a ship, to steer a vessel to China, and his mathematics would be perfectly inadequate to enable him to execute the task. To that abstract science, he must add a practical knowledge of ships, and the mode of applying mathematics to direct their course at sea. Ask a pure mathematician to construct a railroad or a steam-driven spinning-mill, and he would be equally helpless; because his science needs to be embodied in practical forms, before it can become useful. In like manner, religion, which in itself is a sentiment or emotion, must condescend to borrow aid from nature, before it can accomplish any practical earthly purpose whatever. All personal and social improvement has been made by the Ruler of this world to depend on physical and physiological conditions. Health and life depend on them, wealth and destitution depend on them, mental vigour, even the ability to pray, depend on them; for, when the brain is incapable of action, the religious emotions vanish. I repeat, therefore, that before religion can do anything practical towards the temporal improvement of man, its teachers must study and inculcate obedience to the laws of nature.

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[1] National Education, p. 11–13.

This recognised by the common sense of the race.

This fact is recognised by the common sense of mankind, although with the Church its recognition is infidelity.[1] The ancients illustrated it in a fable. A waggoner, whose vehicle had stuck in a rut, prayed to Hercules to lift it out. Hercules answered, "Put your shoulder to the wheel." Another example was given lately by a speaker at a temperance meeting. "A ship," said he, "was in danger in a storm, and the captain, addressing his crew, said "Let us fall on our knees, and pray!" "By all means," answered one of the sailors, "let us pray; but, with your leave, captain, while we pray, let us pump." This reasonable request was granted, and the ship was saved. Every one will form his own opinion to what extent the pumping gave efficacy to the prayer.[2]

3. THE DETRIMENT DONE TO RELIGION AND SCIENCE BY THEIR DIVORCE.

This has caused (1.) The neglect of Science by religious men.

The opinion that religion and morality are revealed only in the Bible, and that science is "godless,"[3] has led to great practical evils. Not only has the religious world too much neglected the teaching of science as the basis of conduct, but the men of science have too much overlooked the religious element with which all science is imbued. One hears in many pulpits God's terrestrial creation, including man Himself as he *naturally* exists, decried and degraded; while, in the halls of science, we may study for years, without hearing God referred to as the fountain of the truths expounded, or any practical inferences drawn regarding what they teach concerning His will. Many divines are either too intent upon the truths of Scripture to study and appreciate Nature and her record, or they are jealous of her. There are, indeed, enlightened exceptions to the truth of this remark, but I speak of the general character of pulpit teaching.

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[1] George Combe had the strongest reasons, when he wrote, for saying this, because his assertion of these truths, now so generally recognised, was then abundantly denounced as "infidelity"; and the lecture from which this is extracted was one of his replies to such a charge.

[2] Lecture on the "Comparative Influence of the Natural Sciences and the Shorter Catechism on the Civilisation of Scotland," delivered in 1851.

[3] This was, in George Combe's time, a common opinion and accusation, now greatly, but not wholly, a thing of the past.

(2.) The neglect of Religion by Scientific men.

The man of science, on the other hand, although not ignorant that he is expounding the "doings of the Lord," is yet too little alive to the practical nature of the truths which he unfolds, as guides to human conduct; and he is also afraid of trenching on the domain of the divine, and perhaps of teaching something which the latter might regard as not altogether doctrinally sound. He will thrill our highest faculties by his descriptions of the stupendous magnitude of creation, and demonstrate to us one God, and one law, ruling in every sphere. After having stretched our imaginations to their utmost limits, and deeply excited our Wonder and Veneration by these solemn gigantic truths, he will direct our attention to the smallest insect, and shew us the same power, wisdom, and skill employed in combining and regulating the minutest atoms of matter to constitute a living and a sentient being. Our souls expand and glow under such contemplations. But here the man of science too generally leaves us. He either does not perceive, or is afraid to announce, how the truths of science bear a direct relation to the human mind and body, and prescribe certain courses of practical action or restraint.

The Natural Laws are at once Science, Religion, and practical wisdom.

Every function of the body and every faculty of the mind has probably received from the Creator a sphere of action, as certainly defined and as wisely appointed as is the orbit of every planet. Each is liable to aberrations by the disturbing influence of the other powers; but limits are prescribed to its deviations, and counteracting forces are instituted to draw it back into its normal course. Sound expositions of these laws of mind and body constitute at once science, religion, and practical wisdom; yet how rarely are the eachings of science thus applied! Scientific discoveries are employed with promptitude and vigour to increase wealth, to improve the arts of destruction, and to augment our sources of recreation and amusement (all proper, in due season and proportion); but they are too much shut out from the school and the pulpit, as rules for human conduct, and themes for human devotion.

The discordances in these are only apparent.

It is true that in interpreting the Book of Nature, as in construing the Bible, many difficulties will present themselves that are inexplicable in the present state of our knowledge. They perplex our moral sentiments, and confound our understandings. But we should not, on this account, reject or undervalue such truths as are clearly revealed in either record. The same Divine Intelligence which appointed the order of nature, constituted the human faculties: and as we meet with no discordant design in those departments of the universe with which we are sufficiently acquainted, we may fairly believe that, in the scheme of creation itself, there is no real incongruity; and that the apparent instances of it which we perceive, will diminish in proportion to the advance of our information. At one time, the aberrations of the planets from their orbits were considered to be incompatible with the permanence of their revolutions, and the solar system was supposed to contain within itself the elements of its own destruction; but advancing science has demonstrated, that these aberrations themselves are exemplifications and fulfilments of the laws which regulate the normal movements of the spheres. A profounder conviction, therefore, of harmony, in the design and revolutions of the heavenly bodies, has taken the place of the doubts previously raised by imperfect knowledge. If men could be induced to regard the mundane creation in this disposition of mind, science would no longer be called "godless." If they would believe that when God instituted the external world, and the human mind and body, He adapted the one to the other, with the same consistency of design and transcendency of wisdom which we discern in his arrangements of the planetary system, we should consider the Book of Nature as replete with instruction, in regard to the objects and employment of all our faculties; and we should call *that* instruction *religious*.

(3.) University Religious Tests.

It is this unfortunate blindness to the essentially religious and moral character of science and its applications, and the fear of infidel consequences, that prompt the Church so doggedly to keep watch over the gates of the universities, and to refuse admission to every man as a teacher who does not swear to his belief in all her doctrines, not only regarding man's conduct in this life, but in reference to eternity. Nevertheless, the law of faith and practice is written in

The Common Sense of men not based on religious tenets.

the constitution of Nature, which men may partially, but can never wholly, overlook. Being woven into the texture of their existence, it forces itself upon their attention, and exacts their obedience. In the ordinary affairs of life, Jew and Gentile, High Churchman and Low Churchman, Believer and Infidel, act upon the same principles of prudence and morals; they view any practical measure as good or bad, according to its influence on their temporal happiness, irrespective of its relations to the different religious creeds which they severally embrace. They act on what is called the principles of "common sense": the familiar name given to the practical judgments which we form from all that we know regarding nature, animate and inanimate, and the course of providence by which this world is governed. This knowledge, traced to its principles and systematized, is science; and as mankind, both in their individual and social capacities, practise upon it, without reference to its relations to their religious opinions regarding eternity, it is to be regretted that certain religious sects oppose that systematic teaching of it which would render it much more efficacious for good, unless it be accompanied by their religious tenets which have no *natural* connection with it. They have succeeded in impressing the public mind with the belief that this science, on which, when unsystematized, they themselves and every one else act, under the name of the "dictates of common sense," has no solid basis except that which their religious tenets lend to it: whereas it derives its whole efficacy for good from its foundations being laid in nature; and it is in virtue of the power which it thence derives, that it controls and gives consistency to human actions amidst the wildest conflicts of religious creeds.

(4.) The non-religion of our Literature and Laws:

I solicit the attention of the reader to those views, because the present practice is replete with grave injuries to society. The notion that morality and religion rest *exclusively* on the Bible as their basis, has produced something like a divorce, not only between religion and science, but between religion and literature, religion and legislation, religion and history, religion and the drama; and left religion in a kind of ideal desert, from which she ever and anon issues to disturb the march of human affairs. Generally speaking, a foreigner might peruse the works of many of our standard authors, study our statute-book, and read our plays without discovering that we possessed any religion at all; except when he met with enactments and controversies directly relating to the church and the dissenters. He could find no consistent religious principle pervading, animating, blending with, and hallowing, these productions of the human mind. This could scarcely have happened if the constitution of nature and its relations, of which these works are meant to be expositions or applications, had been taught to the nation as of Divine origin and enactment. But it is easily accounted for, when we attend to the fact that, a few centuries ago, the knowledge of nature and its laws was even more imperfectly developed than it now is; that, at that time, classical literature, and theology, relating greatly to a future state of existence, and resting for its evidence not on nature but on acts of supernatural power setting aside its established laws, constituted the chief learning of Europe, and took possession of schools, universities, and the public mind; and that this literature and theology have retained their sway over these institutions and society ever since—without cordially inquiring into the moral and religious claims and character of science; without modifying their own tenets into accordance with her increasing lights; without throwing over her the mantle of their refinement and sanctity, for her encouragement and protection; but, on the contrary, too frequently vilifying, opposing, and paralyzing her by every means in their power.

Its origin;

Its results.

The result could not be other than that which we see: Science "godless," although emanating from and teaching most eloquently and impressively the "wisdom of God;" and Religion by far too powerless in the secular affairs of the earth, because not acknowledging this world's constitution in its own basis, but substituting in its place doctrines and tenets, the grand object of which is to propitiate an interest in eternity. Religious persons, distressed by the "godless" character of our periodical and other literature, have established rival works, in which they endeavour to blend their doctrinal tenets with secular affairs, but they do not succeed. In point of fact, they place doctrinal disquisitions in juxtaposition with secular knowledge, without uniting them; and for the simple reason, that, as taught, they are incompatible. The sectarian world, especially the Calvinistic sects, must view nature in a light widely different from that in which they now regard it, before they shall be capable of blending religion and mundane interests harmoniously together.

(5.) The non-religiousness of scientific and literary men.

Another evil attending the prevailing views on this subject, is the very inadequate appreciation entertained by the scientific and literary classes, of the strength and importance of *the religious sentiments.* Debarred by the present state of theology from combining these emotions with their own studies and teaching, they overlook them altogether, and leave them to be wielded as active powers at discretion by the church and the religious sects, without troubling themselves about the uses which are made of them, except when they are directed against science and themselves. The consequence is, that theology reaps small benefit from science; and that its stupendous powers are not unfrequently wielded as engines of personal or sectarian aggrandisement, by men who retard, instead of advancing, the temporal welfare of mankind. By their blind dereliction of the God of nature and his teaching, they occasion a vast waste of mind and physical resources, in so far as regards the reclamation of this world. The men of science see this, yet stand by, timid and inactive. They *feel* a want of social importance and consideration for themselves and their pursuits; yet so dark are their perceptions of their own splendid position, that instead of going forth in the full confidence and panoply of natural truth, to proclaim the sway of the great God of nature in every department of human affairs, to teach his wisdom, and to instruct men in his ways, they felicitate themselves on the visit of a prince to one of their scientific meetings, as a certain means of commanding that public homage which they are conscious that they have never yet secured by their own influence over the public mind.

Its effects on their influence.

They must seek for consideration through other means. The moral and religious sentiments are the grand levers of civilized society. He who commands them is irresistible; and until Science shall discover her own character and vocation,—that she is the messenger of God, speaking directly to these sentiments in strains calculated to thrill and rouse them to the most energetic action—she will never wield her proper influence over society, for the promotion of their moral, religious, and physical welfare. Never, until she does so, will she take that place in social esteem and veneration which, as the fountain of Divine wisdom, she is entitled to possess. Let the scientific world consider the gigantic power of the religious sentiments in sustaining a vast priesthood, under every form of obloquy and depression, and amidst the most appalling poverty, in Ireland; in rearing the fabrics of the dissenting churches in England and Scotland, and supporting a clergy to preach in them; in maintaining numerous schools for education in their own tenets; in rearing colleges, and endowing professorships; in distributing Bibles in every land, and in every language; and in sending missionaries to preach in every country of the globe—and they will obtain a glimpse of a truth which it concerns them to appreciate and apply.

The immense power of the Religious sentiments.

I honour the men who have made these glorious efforts, and who also, under the guidance of their common sense, have diffused a vast amount of secular knowledge through all ranks of society. Their aim has been pure and elevated, and their means holy, although, through the prejudices of their education, they have too much neglected to study nature in a right spirit. They have accomplished these mighty ends by wielding the religious sentiments, as their lever; yet these emotions, when systematically dissevered from science, cannot have achieved their mightiest conquests over human folly, ignorance, and suffering.

These ought to be swayed by Science.

What influence, therefore, might not the men of science wield, and what benefits might they not confer on mankind, if they only knew their own position as the expounders and interpreters of the language which creation is ever addressing to these emotions! If they saw that every word which they utter in correct interpretation of nature's constitution and course of action, carries the efficacy of Divine truth along with it, for the advancement of human happiness, how poor would appear the condescending notice of a prince, as a means of recommending them to public consideration! But have they not done injustice to the prince? Did he not come among them merely to pay his respectful homage to the truths of nature, and without an idea of gracing science by his presence, or of elevating its professors to a more dignified position in the public estimation by his courtesies? Rather let us believe that Prince Albert came to The British Association, as the enlightened admirer of the Creator's wisdom revealed in scientific truth, and esteemed himself honoured by being admitted into the temple of Nature's God, and into the society of the interpreters of His will.

Fewer difficulties in teaching Natural than Revealed religion.

It may be objected, that should men of science endeavour to represent nature as the workmanship of God, and to enlist the moral and religious sentiments (Benevolence and Conscientiousness, Wonder, Hope, and Veneration), by giving a living soul and a practical efficacy to their teaching, they might in one year be under the necessity of recalling as human error, views and principles which, in the previous season, they had taught as Divine truths, and that this would desecrate religion and degrade science. I reply, that penetrating, well-informed, and conscientious men, in interpreting the Book of Nature, would advance as Divine truths only such facts and principles as appeared to them to be fully ascertained; and that, in interpreting the Scriptures, no other or better security against erroneous and presumptuous teaching can be found. When we contrast the conflicting views of Scriptural doctrines which are every day emanating from the press and the pulpit, it is certain that many professors of Christianity are teaching, as Divine truths, views which are merely the emanations of their own misguided judgments. But this is an evil inseparable from humanity. In the case of teaching science as divine truth, there would be this advantage, that no sect or college could claim a vested right or prescriptive privilege of interpretation, and that religious teaching would advance *pari passu* with scientific research and discovery. Besides, errors would in time be detected and exposed by their consequences. Difficulties may long embarrass us in natural as well as in revealed religion; but, as a general principle, it may be stated, that in natural religion every doctrine that is sound leads directly or indirectly to beneficial temporal results, and every error to evil consequences. There is a test, therefore, in this world, by which to try our interpretations of the Divine will in natural affairs; and this is a great safeguard against continuing in error. In religious teaching concerning the life to come, no such test exists. When one sect denounces the doctrines of another as "soul-destroying errors," we cannot call in experience to settle their merits until it be too late. From the other world there is no return; and instead, therefore, of God's sacred name and authority being more liable to be abused in teaching natural than revealed religion, the case is the reverse. In inculcating the latter, human presumption, ignorance, and folly have a wider range of action than in teaching the former. The Roman Catholics and Protestants, on account of some trivial differences, respectively reject each other's version of the Bible as spurious; but Nature speaks one language to all!

The truths of Natural Religion can be directly tested.

Another reason why these views may merit some consideration is, that the Theology which is based exclusively on Scripture and rejects the alliance of Nature, is actually falling before the progress of science. I have travelled in the United States of North America, in Germany, and Italy, and held converse with men of cultivated minds in these countries, as well as in the three divisions of the United Kingdom; and I venture to say, that the Theology which condemns Nature and rejects her alliance, however vigorous, powerful, and triumphant it may appear externally, is in the course of its decline and fall, as no longer suited to an enlightened age. In Germany, the country in which the Reformation originated and from which it spread, and which has, since that epoch, cultivated

Theology adverse to Nature must fall and is falling before Science.

Theology in all its principles and aspects, with the deepest research and most unwearied assiduity,—evangelical religion, as it is understood in this country, has already fallen, and is no longer the faith of the majority of the people. This decline has taken place, not through reckless profanity, as in the case of the French Revolution, but in consequence of long-continued investigation and discussion.

The progress of broader theology in Britain.

This fact is known to, and its significance is appreciated by, large numbers of influential men in the higher, middle, and lower ranks of British society. The masters of the prevalent Theology probably know or suspect this to be the case, but do not correctly estimate the nature and magnitude of the forces which oppose them. Far from receiving cordial support and encouragement from statesmen, men of the world, the press, and men of science, they often meet with cold indifference, plausible apologies, or direct opposition; but many of them mistake the cause of this untoward state of things. Is it not that science and reason have produced in the minds of these classes a silent conviction, that the Theology in question is not a practical system in this world's affair? It is something which often embarrasses and obstructs the movements of society even towards secular good. It is a machinery that is out of order, and cannot be made to work to the advantage of all. Nay, the clergy of various sects are themselves men; *their* faculties too have been adapted to nature's laws and constitution; and when light is abroad, they cannot remain in darkness. The press is daily giving indications that a change is proceeding even in their views; and it is probable that, in a few years hence, only a bold and good spirit will be wanting to shake the theological fabric in this country to the ground, as has already been done in Germany,—and then it will become the duty of enlightened men to reconcile the religion and morality of nature with that of Scripture, to the infinite advantage of both and of the people.[1] I cordially subscribe to the proposition, that "the Gates of Hell," or error, will never prevail against the Church; but the "Gates of Heaven," or higher and purer, more practical and more universal views of Divine truth, will prevail against all sects and churches which set themselves in opposition to the mighty march of man towards the fulfilment of his moral and social destinies.[1]

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[1] Immense progress in broader thought has taken place since George Combe wrote the above in 1846. In this subject George Combe took special interest, and contributed largely to its literature; indeed, all his works are on the side of broader thought. Amongst others, he wrote a series of articles to the *Scotsman* in 1844-5 on "The New Reformation in Germany," published in 1845 as a pamphlet.

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The position of Religious training in education.

[This subject of the Sacredness of Science and the training of the moral and religious faculties by means of it, is one on which George Combe places the highest importance, and to which he constantly recurs. Science being, with him, an investigation into the means by which God conducts the government of the universe, it has religious relations to man, and is truly divine. George Combe is earnest and eloquent on the loss to human experience and happiness, and to religion, science, literature, law, and indeed to man in all his relations to his surroundings, of the prevalent divorce between Science and Religion. His advocacy of the training of the religious faculties, primarily of children, and also of men and women, as an essential element in true education, distinguishes him from many advocates of Secular Education. His claim for such instruction in all schools follows from his view of the nature and aim of education, as training the whole faculties of man; and his position in regard to it is therefore strictly logical. Additional arguments on it will be found in Part Fifth, chap. ii. By his advocacy, George Combe would redeem back into the sphere of Religion the all-important, wide, and ever-widening domain of Science, and would make it not only one of the best trainers of the observing and reflecting, but of the æsthetic, moral, and religious faculties. His contention is an important one in education, and should help greatly towards a final adjustment of the problem of Real education in this department. The training of the moral and religious sentiments is a necessary function of a true system of education, and a place must be found for it there.

George Combe's advocacy of it.

The conception of the sacredness of Natural Law, though frequently treated of by George Combe from his first utterances on Philosophy, was more fully worked out in his pamphlet "On the Relation between Science and Religion," published in 1847, "which attracted considerable attention." It was finally and fully developed by him in his larger work under the same title, published in 1857. The interesting and instructive history of his search after the principles of the Moral Government of the world, already given in this chapter, is also contained, in fuller detail in some parts, in the Introduction to the last-mentioned work. As told by himself, the idea was worked out in conjunction with his brother, Dr Andrew Combe, who earnestly embodies it in his different works, especially in his first, the "Principles of Physiology," published in 1834.

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[1] National Education, pp. 19–28.

The first propounding of the idea of the Sacredness of Science.

Leigh Hunt, who does not seem to have known George Combe's contributions to the subject, writes in 1853 of this work of Dr Combe's, and after speaking of the "preposterous distinction between the laws of God and those of Nature," says: "When Dr Andrew Combe proclaimed their identity, and showed that a violation of the laws of health of the human organisation was an offence against the Divine Maker of those laws, his announcement had the effect of a revelation! And, generally speaking, it was one,—a divine revelation; and this, too, of a nature which all the world has desired, namely, one which carried its evidence in palpabilities all round about us, in ourselves, in others, in their faces, their minds, their sufferings, mental and physical, in the commonest headache after intemperance, the commonest repletion at 'a clergy or a city feast,' the commonest foolish indulgence of a child. Also in the whole round of science and its discoveries. A law in astronomy or electricity, announced by a Herschel or a Faraday, is a law made by the Maker of the stars. The ship or the telegraph cannot violate it, but it goes wrong. A law announced by the physician or the physiologist is equally a law of the same Maker. It cannot be violated, but the offender is admonished by the consequences. To know its relation to the Creator is to have a new light opened upon us in things divine as well as human; and this, indeed, is to bring religion to bear upon daily life, and to show a faith, an evangel, in which all can agree."[1]

The need of its recognition in Education.

In science, available for such training, George Combe, as we have seen, includes not only the Physical, but the Mental, Moral, Social, and Political sciences, as all equally investigating the Moral Government of the world.

The training of the religious faculties through science, is a most important element in education, and it has not received the attention it deserves. It is equally real and necessary, whatever doctrinal or religious opinions are entertained, whether orthodox, broad, non-theistic, or atheistic; for there exist no higher or more admirable instruments for training the moral and religious faculties —which are inherent in human nature, and must be trained to right ends, if they are not to run loose into superstition and worse—than the Cosmos and its wonderful phenomena and wonderful laws.

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[1] See Leigh Hunt's "The Religion of the Heart," originally published by John Chapman, London, and recently re-issued by Trübner, London (First edit., p. 195).

For fuller information as to the nature of the religious training recommended by George Combe, and the manner of its teaching, see Part Second, chap. vii.; Part Third, chap. iii.; and the Appendix.—*Edit.*]

CHAPTER VI.

ON INSTRUCTION IN SOCIAL AND POLITICAL SCIENCE.

1. THE NEED OF INSTRUCTION IN THE MACHINERY AND OBJECTS OF LIFE.

The ignorance of Society in regard to the objects of life.

IT is of much importance to children to give them correct views of the real principles, machinery, and objects of life, and to train them to act systematically in relation to them, in their habitual conduct. What should we think of a merchant who should embark himself, his wife, family, and fortune on board of a ship, take the command of it himself, and set sail on a voyage of adventure, without knowledge of navigation, without charts, and without having any particular port of destination in view? We should consider him as a lunatic. And yet many men are launched forth on the sea of active life, as ill provided with knowledge and objects as the individual here imagined. Suppose, however, our adventurous navigator to use the precaution of placing himself under convoy, to attach himself to a fleet, to sail when they sailed, and to stop when they stopped; we should still lament his ignorance, and reckon the probabilities great of his running foul of his companions in the voyage, foundering in a storm, being wrecked on shoals or sunken rocks, or making an unproductive speculation, even if he safely attained a trading port. This simile appears to me to be scarcely an exaggeration of the condition in which young men in general embark in the business of the world. The great mass of society is the fleet to which they attach themselves; it is moving onwards, and they move with it; sometimes it is favoured with prosperity, sometimes overtaken by adversity, and they passively undergo its various fates; sometimes they make shipwreck of themselves by running foul of their neighbours' interests, or by deviating from the course, and encountering hazards peculiarly their own; but in all they do, and in all they suffer, they obey an impulse from without, and rarely pursue any definite object except the acquisition of wealth, and they follow even it without a systematic plan. If you consider that this moving mass called society is only a vast assemblage of individuals, nearly all equally ignorant, and that the impulses which they obey are merely the desires of the most energetic minds, pursuing, often blindly, their individual advantage, you cannot be surprised at the strange gyrations which society has so often exhibited. In rude ages, the leaders and the people loved "the pride, pomp, and circumstance of glorious war," they moved to the sound of the trumpet, and rejoiced in the clang of arms. In our day, the leaders steer to wealth and fame, and the mass toils after them as best it may. In one year, a cotton mania seizes the leaders, and vast portions of the people are infected with the disease. In another year, a mania for joint-stock companies attacks them, and their followers again catch the infection. In a third year, a fever for railroads seizes on them, and all rush into speculations in stock. In these varying aspects of social movements, we discover nothing like a well-considered scheme of action, adopted from knowledge, and pursued to its results. The leaders and the multitude appear equally to be moved by impulses which control and correct each other by collision and concussion, but, in each of which, thousands of individuals are crushed to death, although the mass escapes and continues to move forward in that course which corresponds to the direction of the last force which was applied to it.

Its disastrous effects.

It appears to me that, by correct and enlarged knowledge of human nature and of the external world, the young might be furnished with a chart and plan of life suited to their wants, desires, and capacities as rational beings. If they should subsequently become leaders, this would enable them to steer the social course with greater precision and advantage than has been done in bygone times; or, if they remained humble members of the body-politic, to shape their individual courses, so as, in some degree, to avoid the collisions and concussions which reckless ardour, in alliance with ignorance, is ever encountering. A young man, if properly instructed, should commence active life with a clear perception of the natural laws by which social interests, and particularly those of the profession which he adopts, are governed; the results to which the various courses of action submitted to his choice are calculated to lead; and the steps by which these results are in general evolved. This advantage, however, is rarely possessed, and the young are left to grope their way, or to join the convoy and sail with the fleet, as they best are able.

These removable by early instruction in Social Science.

Under the present system of impulsive and imitative action, one or other of two errors generally infects the youthful mind. If the parents of a family have long struggled with pecuniary difficulties

Errors arising from the want of this, in reference to (1) The over-eager pursuit of wealth.

and the depression of poverty, but ultimately, after much exertion and painful self-denial, have attained to easy circumstances,—they teach their children almost to worship wealth; and, at the same time, fill their minds with vivid ideas of laborious exertions, sacrifices, difficulties, cares, and troubles, as almost the only occurrences of life. They represent expense and enjoyment as closely allied with sin; and young persons thus trained, if they possess well-constituted brains, often become rich, but rarely reap any reasonable satisfaction from their earthly existence. They plod, and toil, and save, and invest; they are often religious, on the principle of laying up treasures in heaven; but cultivate neither their moral nor their intellectual faculties; and, at the close of life, complain that all is vanity and vexation of spirit.

(2) Over-easiness in business.

The second error is diametrically the opposite of this one. Parents of easy, careless dispositions, who have either inherited wealth, or been successful in business without much exertion, generally teach their children the art of enjoying life without that of acquiring the means of doing so; and such children enter into trade or engage in professions under the settled conviction (not conveyed by their parents, perhaps, in direct terms, but insensibly instilled into their minds by example), that the paths of life are all level, clear, and smooth; that they need only to put the machinery of business into motion; and that, thereafter, all will go smoothly forward, affording them funds and leisure for enjoyment, with little anxiety, and very moderate exertion. Young persons thus instructed, if they do not possess uncommonly large organs of Cautiousness and Conscientiousness, go gaily on in active life for a brief space of time, and then become the victims of a false system and of inexperience. They are ruined, and suffer countless privations. The errors of both these modes of training the young should be avoided.

Hence the need of sound views of the Social laws;

After health, education, and virtuous habits, the best provision that a parent can make for his son, is to furnish him with sound views of his real situation as a member of the social body. The Creator having destined man to live in society, the social world is so arranged that an individual, illuminated by a knowledge of the laws which regulate social prosperity, by dedicating himself to a useful pursuit, and fulfilling ably the duties connected with it, will meet with very nearly as certain a reward, in the means of subsistence and enjoyment, as if he raised his food directly from the soil. Astonishing stability and regularity are discoverable in the social world, when its co[illegible]n and laws of action are understood. If legislators would [illegible]rotect what they call national, but which are really

And of teaching these to the young.

class interests, and would leave the business world free to its spontaneous movements, enforcing by law only the observance of justice, —the labourer, artisan, manufacturer, and professional practitioner would find the demands for their labour, goods, or other contributions to the social welfare to follow with so much constancy and regularity that, with ability, attention, and morality on the part of each, they would very rarely indeed be left unprovided for. It is of great importance to press home this truth on the minds of the young, and to open their understandings to a perception of the causes which operate in producing this result, that they may enter into active life with a just reliance on the wisdom and goodness of the Creator, in providing the means of subsistence and enjoyment for all who discharge their social duties; and yet with a feeling of the necessity of knowledge, and of the practice of that moral discipline which enforces activity and good conduct at every step, as the natural and indispensable conditions of success.[1]

The prevalent ignorance of man's constitution and the objects of life; and its consequences:

Man is a compound being, consisting of body and mind. These are so intimately connected, that the over-excitement of the mind wastes and wears out the body; while the neglect of exercising it leaves the vital powers languid and imperfect in their action. Excessive bodily labour deadens the mind, and renders it incapable of thinking and feeling; while inactivity of body induces a feeble and irritable mental condition, incompatible with usefulness and enjoyment.

Now, have the members of civilized society generally studied their own bodily and mental constitution, with their mutual influence, and framed their public institutions and domestic habits with a view to allow to individuals in general that just proportion of bodily and mental exercise, in the forms which are indispensable to the complete enjoyment of their existence? The answer must be, that they, in general, know extremely little about their own bodily and mental constitutions, and that, among many classes, it is held disgusting to study the one,[2] and ridiculous to know any thing about the other. Hence their constitutions and habits have not been adopted with designed reference to the elementary qualities and real wants of human nature; they have grown up by chance, and present a mass of incoherent inconsistencies.

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[1] Moral Philosophy, Lecture vii.

[2] When George Combe began about 1830 to lecture on Physiology, the subject was objected to as "improper," "indelicate," &c.! The above was written in 1830.

(1.) In the Lower Orders

It is scarcely necessary to offer proof of this proposition, but a few illustrations may be mentioned. The lower orders are at this moment extremely ignorant of natural knowledge; severe labour, with inadequate recompence, is entailed on them by their condition; and their circumstances render them incapable of that high degree of exercise of the moral and intellectual powers which is essential to the happiness of rational beings. In consequence, they are, to a great extent, the victims of animal propensities, and are visited by suffering in every form. Individuals belonging to this class are launched into life without any moral chart of the world or definite object in view. They have no notion of adapting their habits and mode of life to their nature as rational beings. Their ambition, if we may read their feelings in their actions, is to obtain, as early as possible, sufficient wages to enable them to marry. They rear children, but are in a great degree incapable of instructing them in every thing that they should learn; because, 1*st*, An individual of this class has little leisure, from excessive labour, to bestow on their mental cultivation; 2*ndly*, His labour renders his mental faculties incapable of acting with effect, during that portion of time which is left to him; and 3*rdly*, He is destitute of knowledge wherewithal to instruct them, owing to the deficiency of his own education. Now, the lower orders constitute nine-tenths of the whole population, even in the most civilised countries of Europe. While they remain ignorant and irrational, their condition must affect the welfare of the whole community; and we humbly think, that as the Creator has bestowed on them reasoning and moral powers, and on this account denied them instinctive guidance, they stand in great need of a Philosophy of Mind which should make them acquainted with these gifts, and open their eyes to the imperative obligation which the possession of them imposes, to cultivate their higher faculties, and to become capable of directing their conduct by their dictates.

The great difficulty in raising them.

A great difficulty presents itself in regard to this class. They are so low in civilisation that they cannot be trusted with leisure and property at the same time; for they possess few mental resources to preserve them from vicious employment of their vacant hours, and confer on them a relish for refined enjoyments. At the same time, while they are exposed to severe labour and doomed to poverty, it is nearly impossible to communicate to them mental cultivation, so as to induce them to act rationally, because, in that condition, they have neither capacity nor desire to receive it.

The remedy appears to be to teach them, while at school, before entering on daily toil, as much of their own nature, of the aim of life, and of their duties, as possible; so as to send them into the sphere of active exertion, possessed of some precise notions of what a rational being ought to know, and how he ought to act, to frame the plan of his life in harmony with his nature, and thus promote his own happiness. We respectfully maintain that acquaintance with Phrenology and its applications, which even young persons can comprehend, would be of the highest value with this object in view.[1]

The only remedy is real instruction at school in the aims of life.

(2.) In the Middle ranks

The evils in the institutions and pursuits of society are not fanciful, nor are they inseparable from human nature. A few examples will show that they result from ignorance. We lately put the question to an excellent young man about to embark for India, what views he entertained of life, and the objects of his own existence. The question was new to him. He had been well educated, in the common acceptation of the words, but he had never conceived that life had any higher aim than to acquire a fortune, marry, rear a family, live in a fine house, drink expensive wines, die, and go to heaven. There was no provision in this life for enjoyment from the higher faculties of his nature. He was not aware that these had any other functions to perform than to regulate his conduct in the pursuit of the gratification of his inferior feelings. This is the condition of mind in which almost all young men of the upper and middle classes of society enter into active life, and nothing can be well conceived more disadvantageous to their success and happiness. Those who are religiously educated are not more fortunate: because no sect in religion has yet addressed itself to the duty of teaching, in a rational manner, the nature of man, the nature of the different professions in life, and of the institutions of society, and the relation of all these to the moral and religious faculties of the mind; without understanding which, no person entering upon active life can see his way clearly, or entertain consistent and elevated views of duty, and the true sources of enjoyment.

(3.) In the Upper ranks.

This deficiency in knowledge is also remarkably exemplified in young men born to large fortunes, who have succeeded in minority to their paternal estates, and, on attaining twenty-one years of age, have been left to pursue their own happiness in their own way. Rational views of themselves, and of human nature, and the institutions of society, would be invaluable to such individuals; but they have no adequate means of obtaining them. A story reached us of a young gentleman belonging to this class, not destitute of talents and good feeling, who emerged out of the hands of his instructors in such a hopeful condition that he devoted himself to horses and hounds, as usual; next, to coach-driving; he then married, and his post-connubial amusement was forming a float in the midst of a pond, placing cats upon it, and sending dogs to swim in and worry them. In a speech which the young Duke of Buccleuch[1] recently made at Dumfries, he stated that his guardians had taught him that the great duty imposed on him by his large fortune was to do *good.* This was an excellent lesson; but did they tell him *how* he could best accomplish good? If his Grace were questioned on this point, we doubt much whether his intellectual perceptions of good, and the manner of pursuing it, would equal the fervency of his desires to attain it.

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[1] *Phrenological Journal* (for 1829–30), vol. vi. p. 324.

Higher aims in life for such.

We take the liberty to state that, in our opinion, time dedicated to horses and hounds, beyond what is necessary for health, is not good, either to himself or his country; that the pursuit of political influence, with a view to support the existing imperfections in Church and State, is not good; that idleness or frivolous occupations are not good; and that all external pomp, circumstance, and equipage, which are calculated to remove him from a knowledge of, and sympathy with, the general mass of cultivated society, are not good. On the other hand, it would be highly beneficial if he would set the example of pursuing knowledge and applying it to useful purposes, so as to prove that he values the higher qualities of mind more than physical possessions; if he would patronise enlightened opinions; establish and support infant schools all over his estates; promote the formation of a college in his native country for educating the middle classes of society in general knowledge, applicable to practical purposes; endeavour to reform public institutions and the laws, so as to bring them as much as possible into harmony with the moral and intellectual faculties of man: in short, if he would view his wealth as a vast means for gratifying his Intellect, Benevolence, Veneration, Conscientiousness, and Ideality; and seek his supreme happiness in pursuits emanating from these faculties—he would do good effectually, and reap the highest reward, in the intense enjoyment of his rational nature. We cannot see a reason why, when a duke shall be born in whom the moral and intellectual organs are large and the temperament is active, and whose education shall be conducted on the principles unfolded by Phrenology, such a course of conduct should not be realised. It will then be acknowledged that the waste of life, fortune, and happiness by the affluent, which characterises the present, as it has marked the past ages of the world, was owing in no small degree to ignorance of human nature, its wants and capacities.

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[1] The present fifth Duke of Buccleuch (1878), who was born in 1806, and attained his majority in 1828, when he took his seat in the House of Lords, and began public life. The above was written in 1830 (*Phrenological Journal*, vol. vi. p. 627).

The real character of pride of ancestry.

In the higher ranks of life, family and ancestry are considered of great importance; nevertheless, daily instances occur of individuals sacrificing their prejudices on this head to wealth; and of aristocratical blood allying itself with mechanics or merchants, sprung from the lower walks of life, and ennobled only by wealth accumulated in these employments. The pride of ancestry arises from Self-esteem and Veneration, and has a legitimate as well as an illegitimate direction. In most of the countries of Europe, the founder of each great family was some feudal chieftain, of warlike and predatory habits, who, if he had done the same deeds in modern times, would have been designated as a robber and manslayer. On the principle that qualities of mind and body are transmitted by descent, it can be no honour to a mind which esteems its rational powers as the noblest, to derive its existence from such a source. The pride in such ancestry, which still exists, shows latent barbarism in the hearts of our nobility. Time and better education will render them ashamed of such progenitors.

Truly noble ancestors.

The real source of family pride ought to be that of a sound bodily constitution, and a moral and intellectual development of brain, transmitted through many generations. It would be a real and positive advantage to obtain a husband or wife out of a family which had been distinguished for centuries for health and longevity, for handsome forms, agreeable features, kind, pious, and honourable dispositions, and great intellectual acumen. These qualities would render the domestic circle cheerful, animated, affectionate, and full of serene intelligence; they would command the world's respect and love, and ensure success in every enterprise, so far as human virtue and sagacity could go.

The foundation and aim of ancestral pride.

The admiration of ancestry, and the tendency to set a value on it, arise from instinctive feelings, and are given for the best of purposes; but the latter form of its gratification appears to us to be clearly that which alone satisfies man's rational faculties, and which, when enlightened, he will undoubtedly alone desire. The devices to found gratification of this feeling on entails and transmission of hereditary titles of nobility, without regard to the laws implanted in the human constitution, lead to lamentable failures and miserable results. No attention being given to transmit sound bodies and well-constituted brains along with territory and titles, we see great landholders, whose acres have descended through centuries, wandering in beggary over Europe, while their rents are seized by creditors, who have supplied them with money squandered by them in sensual debauchery and in utter profligacy; earls and noble lords appear in a state of idiocy; and, in short, titles of nobility are found combined with incapacity and immorality of every form which the human imagination can conceive.

Instruction in Human Nature the only cure for these evils.

We repeat, that although individuals should fear and wish to avoid these calamities, instruction in human nature is so deficient that it is almost impossible to be certain of doing so.[1]

The world is based on the supremacy of the Moral Law.

In cases of conflict among the faculties, the world is arranged on the principle of the supremacy of the moral sentiments and intellect, observance of the moral law is attended with external advantages, and infringement of it with evil consequences; and from this constitution arises the natural punishment of immoral conduct.[2]

This shown—(1.) In domestic life;

Let us trace the advantages of obedience.—In the domestic circle, if we preserve habitually Benevolence, Conscientiousness, Veneration, and Intellect supreme, it is undeniable that we shall rouse the moral and intellectual faculties of children, servants, and assistants to love us, and to yield us willing obedience and aid. Our commands will be reasonable and mild, and the commerce between us will be that of love.

(2.) In society;

With regard to our equals in society, in what high estimation do we not hold a friend in whom we trace the supremacy of the moral sentiments; what love, confidence, and delight do we not repose in him! To a merchant, physician, lawyer, magistrate, or a person in any public employment, how invaluable is the habitual supremacy of these sentiments!

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[1] *Phrenological Journal*, vol. vi. p. 626.

[2] George Combe *demonstrates* this great truth in his "Constitution of Man," published in 1828. He had already treated the subject, in a paper on "The Natural Supremacy of the Moral Sentiments," read before the Edinburgh Phrenological Society, on March 30, 1826, afterwards published in the *Phrenological Journal*, No. XI. vol. iii. for 1825-6. On this subject, Mr James Simpson remarks: "This sublime truth had not escaped observation. Bishop Butler *felt* it as an impression on his virtuous mind, but failed to establish its universality on demonstrable evidence. The name of George Combe must be associated with the demonstrated and complete system" ("Philosophy of Education," by James Simpson, 2nd edit. p. 88.)

(3.) In business.

The Creator has bestowed talents in different degrees on different individuals, and also limited their powers; consequently, by confining their attention to one department of labour, they execute it better—an arrangement which amounts to a direct institution of separate trades and professions. Under the natural laws, then, the manufacturer may pursue his calling with the approbation of all the moral sentiments, for he is dedicating his talents to supplying the wants of his fellow-men; and how much more successful will he be, if his every proceeding be accompanied by the desire to act benevolently and honestly towards those who are to consume and pay for the products of his labour! he cannot gratify his acquisitiveness half so successfully by any other method. The same remark applies to the merchant, the lawyer, and the physician. The lawyer and the physician who consult, as a paramount object, the interests of their clients and patients, obtain not only the direct reward of gratifying their own moral faculties, which is no slight enjoyment, but also high respect and a well-founded reputation, combined with increasing emolument, not grudgingly paid, but willingly offered by persons who feel the worth of the services bestowed.

The industrial conditions of moral and intellectual rewards.

Three conditions are required by the moral and intellectual laws, which must all be observed to ensure their rewards. 1*st*, The department of industry selected must be really useful to human beings—benevolence demands this; 2*d*, The amount of labour bestowed must bear a just proportion to the demand for the commodity produced—intellect requires this; and, 3*d*, In our social connections, we must scrupulously attend to the fact, that different individuals possess different developments of brain, and, in consequence, different natural talents and dispositions, and we must rely on each only to the extent warranted by his natural endowments.

If, then, a man has received at birth a sound organic constitution and favourably developed brain, and if he lives in accordance with the physical, the organic, the moral, and the intellectual laws, it appears to me that, in the constitution of the world, he has received from the Creator an assurance of provision for his animal wants, and of high enjoyment from the legitimate exercise of his various mental powers.

I have already observed, that before we can obey the Creator's institutions, we must know them; that the sciences which teach the physical laws are Natural Philosophy and Chemistry, while the

The consequent need of instruction in these principles.

organic laws belong to the department of Anatomy and Physiology: and I now add, that it is the business of the Political Economist to unfold the kinds of industry that are really necessary to the welfare of mankind, and the extent of labour that will meet with a just reward. The leading object of Political Economy is to increase enjoyment, by directing the application of industry. To attain this end, however, it is obviously necessary that the nature of Man, the constitution of the physical world, and the relations between these, should be known. Hitherto, the knowledge of the former of these elementary parts has been deficient; and in consequence, the labours of political economists have been productive of little practical advantage, in comparison with what they may yield when founded on a more perfect basis.

The defective exposition of Social Science, and its consequence in society.

The masters in Economical Science have not taught that the world is arranged in accordance with the harmonious activity of all our faculties,—the moral sentiments and intellect, in cases of conflict, holding the supremacy; that, consequently, to render Man happy, *his leading pursuits must be such as will exercise and gratify all his powers;* and that his life will necessarily be miserable, if devoted exclusively to the production of wealth. They have proceeded on the notion that the accumulation of wealth is the *summum bonum.* But all history testifies that national happiness does not invariably increase in proportion to national riches; and until they shall teach that intelligence and morality are the foundation of all lasting prosperity, they will not interest the great body of mankind, nor give a practical direction to their efforts. Further, in deducing the practical consequences of the infringement of economical laws, they often omit to give due prominence to the mitigating influence of the moral laws. They show, for example, that the Irish peasantry, by multiplying their numbers beyond the extent of their capital and of profitable fields of labour, exposed themselves and their offspring to the horrors of destitution. This fact is undeniably true; but they omit to add, that it was the duty of the enlightened and wealthy members of society to mitigate the severity of that destitution, by assisting the sufferers, while they enforced on them stricter obedience in future to the natural law. Indeed, society suffers a double disadvantage from the present severance between moral and economical science. Benevolent men relieve the destitute, but rarely think of removing the causes of destitution; while the poor, uninstructed regarding the connection between their own conduct and their misery, rely more and more on charitable relief, and seldom endeavour to abandon the course of action which has led to their degradation.

If the views contained in the present treatise[1] are sound, it will become a leading object with future masters in Economic Science, to teach that Man, in his whole conduct, must conform to the natural laws, as the only means of saving himself from ceaseless evil.[1]

It is too much devoted to the question of Wealth.

If I be correct in the opinion that the happiness of each individual is inseparably connected with that of the society in which he lives, and that the law that we must love our neighbour as ourselves, really means, in its extensive sense, that individual enjoyment can arise only from improved social habits and institutions,—then I shall not be thought to be guilty of extravagance when I remark that, in times past, this view has rarely, to any practical end, been pressed on the attention of society. Within the last fifty or sixty years, Political Economy has been discussed on philosophical principles; but the leading aim of the economists has been to demonstrate the most effectual means of increasing wealth. The very title of the first valuable work on the subject, in this country, is "The *Wealth* of Nations," by Dr Adam Smith. The principles which he expounded, it is true, are in many respects coincident with those which I am now advocating; and no one can value his labours, and those of his successors, such as Ricardo, M'Culloch, and their followers, more highly than I do: yet it is unquestionable, that the great aim of all these writers has been to clear away the rubbish that impeded the play of our selfish faculties, and to teach the advantage of repealing all laws that impede a man in following his own bent, in search of his own happiness in his own way, restrained only by the obligation that he shall not *directly* injure or obstruct the prosperity of his neighbour.

It should teach the principles that harmonise the whole nature.

In the infancy of civilization, the exposition of the natural laws by which wealth is created and diffused is most valuable, and these writers are worthy of all consideration as being useful in their day. But society must *advance* in its course. It *has* augmented its wealth, while many persons doubt whether the increase of happiness has, in all ranks, kept pace with that of its riches. What seems now to be wanted is, the application of principles in harmony with our whole nature, physical, animal, moral, and intellectual, calculated to lead to the gratification of *all* our powers.

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[1] Constitution of Man, 9th edit. p. 190.

We need to be enlightened regarding the constituent elements of our own happiness, and to pursue it, in combination, in a right direction.[1] The gigantic efforts of Britain in war afford an example of the prodigious power, in the form of violence, which we are capable of wielding; and if our forefathers had dedicated, to the physical and mental improvement of the people, the same ardour of mind and the same amount of treasure which they squandered in battles, between the years 1700 and 1815, what a different result would, at this day, have crowned their labours! If they had bestowed honours on the benefactors of the race, as they have done on its destroyers, how different would have been the direction of ambition!

The need of after-school instruction in these principles.

The next requisite for improving our social condition, is the command of time for the discharge of our social duties. One day in the week is set apart for teaching and practising our religious duties; but, in that day, little instruction is communicated by our public and authorized teachers touching the affairs of this world, and the laws by which the happiness of our social state may be best promoted. The other six days of the week are devoted to the advancement of our individual interests in the pursuit of wealth, or, as the Scripture designates it, to the collection of "the meat which perisheth." In the existing arrangements of society, our social duties do not appear to be generally recognised as incumbent on us. There are few seminaries for making us acquainted with them, and no time is allotted for the practice of them. Those unofficial individuals who discharge public duties, must either sacrifice to them the time which their competitors are devoting to their private interests, or overtask their minds and bodies by labouring when nature demands repose.

This instruction would lead to—

With all deference to existing opinions, I should humbly propose that a specific portion of time should be set apart for teaching in public assemblies, and discharging practically our social duties, and that all private business should then be suspended. If half a day in the week were devoted to this purpose, some of the following consequences might be expected to ensue:—

(1.) A belief in the importance of social institutions;

In the first place, the great importance of social institutions and habits to individual happiness would be brought home to all. It would be half a day dedicated to the consideration of the means by which we might practically love our neighbours as ourselves. A public recognition of the principle, as one capable of being carried into effect, would, in itself, bend many minds towards realizing it.

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[1] George Combe's "Constitution of Man," "Moral Philosophy," and other works, and William Ellis's works are special contributions to this broader view of Social Science. See remarks on this view, at the end of this chapter.

(2.) The study of social questions;

Secondly, such an arrangement would enable, and also excite, the people at large to turn their attention seriously to moral and social considerations, in which their true interests are so deeply involved, instead of considering it meritorious and advantageous to neglect them; and it would tend to remove a dense mass of ignorance and prejudice which offers a powerful obstacle to all improvement. If I be correct in thinking, that individual men cannot realize the Christian precepts in their actions, while living in a society whose ruling motives are opposed to them, it is obvious that the rectification of our social habits is an *indispensable* prelude to the introduction of practical Christianity; and how *can* these be rectified unless by instructing the people in the means of improving them? Thus the religious community are deeply interested in promoting the plan of reformation now proposed.

(3.) Good men taking part in public business.

Thirdly, the dedication of a specific portion of time to our social duties, would leave leisure for truly virtuous and enlightened men to transact public business, without exposing themselves to be ruined by their competitors in the race of private interest. Under the present system, the selfish are enriching themselves, while the patriotic are impoverishing their families by discharging their public duties. But as individual morality and happiness never can be securely and permanently maintained without social improvement, it follows that some adequate means must be used to communicate to men in general a correct and elevated view of their own nature, position, interests, and duties, as rational beings, with a view to induce them to improve their social habits and institutions, as a necessary preliminary to their individual well-being. In the "Constitution of Man," I have endeavoured to show that the power of abridging labour by mechanical inventions appears to have been bestowed on man, to afford him leisure for cultivating his moral and intellectual powers; and if this idea be correct, there can be no natural obstacle to the dedication of sufficient time to the duties in question.

The early teaching of Social principles would prevent abuses.

Perhaps the notion will present itself to many persons, that if the industrious classes were congregated to receive instruction in this manner, the result would be the formation of innumerable clubs and debating societies, in which vivacious but ignorant men would imbue the weaker brethren with discontent, and lead them into mischievous errors. This would probably happen, if a sudden adoption of the plan took place, without previous preparation. At present, ignorance of sound social principles is so prevalent, that such unions might be abused; but a young and rising generation may be prepared, by training and education, for comprehending and performing their social duties, and then leisure for the practice of them would lead only to good.

The want of this instruction destroys interest in public affairs.

Not only has no sufficient instruction in social duties been provided for the people, but the opinion has been very generally adopted that they have no such duties to discharge, except to pay taxes, and to bear arms in the militia; and that they go out of their sphere when they turn their attention to public affairs. This appears to me to be an erroneous assumption; because the industrious classes are, if possible, more directly and seriously affected by the good or bad management of public interests than the rich, in whose hands alone it has been imagined that the discharge of social duties should be placed. The operative tradesman and small shopkeeper absolutely rise and fall with every wave of public prosperity or adversity; whereas the landed proprietor and the great capitalist are able to weather many a social storm, with scarcely a perceptible abridgment of their enjoyments.

This instruction would equalise the enjoyments of all.

After the people at large are enlightened, and thoroughly imbued with the love of justice and of the happiness of their neighbours, another social duty will be, to carry into practice as far as possible, and by every moral means, the equalisation of the enjoyment of all —not by pulling the fortunate and accomplished down, but by elevating the condition of the inferior orders. With this view, all privileges and artificial ranks which obstruct the general welfare should be abolished; not violently but gradually; and, if possible, by inducing their possessors to give them up, as injurious to the public and not beneficial to themselves.[1]

The prevalent ignorance of the Principles of Trade.

The ignorance of the first Principles of Trade displayed by most of the persons whose transactions are brought to light by judicial investigations, is lamentable. The possession of *capital* is *indispensable* to success in manufacturing and trading, and capital may be obtained by inheritance, by saving, or in loan. In this last case, it is necessary to safe trading, that uncontrolled possession of the capital borrowed should be secured for a period of years. On the other form of trading, viz., the *credit system*—in which large capitalists sell goods to persons who do not pay the price in money, but grant bills for it, payable in three, four, or six months after date, while the holder of capital in permanent loan is in equally favourable circumstances with persons who trade on their own capital, abating only the interest, the condition of those who buy on credit is far more perilous. In the histories given by most of the bankrupts concerning the capital they commanded at starting in trade, and the manner in which they conducted their operations, there appears almost an unconscious ignorance, that the creation and distribution of wealth are governed by any natural principles whatever.

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[1] Moral Philosophy, chap. xi. See an article by George Combe on the subject of the last sentence, called "Parliamentary Reform; or, The Effects of the Enlightenment of the People on the Titles and Possessions of the Aristocracy," in the *Phrenological Journal*, vol. vii. (for 1831–2) p. 587.

General causes of bankruptcy.

If our readers will analyse the history of their transactions, given by the bankrupts whose examinations are recorded in the press, they will discover that, in nine instances out of every ten, trade was commenced and carried on by them in one or other of these or similar ruinous ways; and we ask what is the remedy for these great social evils? To punish the offenders as criminals would in many instances be harsh, because they have acted just as multitudes of other persons are doing, and they meant no harm. To find a remedy in an Act of Parliament would be difficult; because the evil may be traced to a variety of causes needing to be brought under influences far more potent than those of the legislator. In some instances, it may be ascribed to ignorance of the natural laws which regulate the production and distribution of wealth; in others, to mental confusion and want of real capacity for business; in others, to deficient moral honesty; in others, to a sanguine disposition, seeing everything future in golden colours, or to a lymphatic constitution which allows things to take their own course, uncontrolled by attention and judgment. The evils produced by these defects are aggravated by the absence of an enlightened moral public opinion condemning their results, and also by the silence of the schoolmaster, the professor, the public press (with some highly meritorious exceptions), and the pulpit, concerning the physical, intellectual, moral, and religious conditions on which success in trade depends.

Remedies for these:

The conclusion, then, at which we arrive is, that these deficiencies must be supplied as far as possible by improvements in our education and training, before the sufferings under which so many hearts are now aching will be seriously diminished. In particular, we must have a far higher standard of morality infused into commercial pursuits. *Buying* should be invested with a sense of *moral*, as well

(1.) Training to higher commercial morality.

as *legal*, obligation to pay. Trade should be viewed as dealing with other men's substance, in which just and prudent management should be viewed as a matter of conscience. The person who becomes bankrupt should feel that he has shown himself deficient in some quality or condition that was necessary to enable him to cope with the difficulties of his position; and society, while forgiving, should not approve of his shortcomings. The prevalent maxim of "Heads I win; tails you lose," which seems actually adopted as a practical rule by some traders, should be severely rebuked.

(2.) Instruction in the Natural Laws of Wealth.

But, above all, instruction in the Natural Laws of Wealth should be given in our schools. Scotland, bent on a high religious education, is falling behind England in this respect. In London, there are at least a dozen of schools in which the practical principles of Social Economy are systematically taught to children of the lower and middle classes; among these, the School of London University College, and the Peckham Birkbeck School, conducted by Mr Shields, are pre-eminently successful. The Dean of Hereford also has introduced the same kind of instruction into his schools[1]; and the work edited by him on "The Phenomena of Industrial Life"[2] has gone through an edition of 5000 copies, in three or four years.[3] The works of Mr William Ellis, one of which, "Religion in Common Life," we recently commended to public attention, have also greatly promoted the study in the south.[4]

Let it not, therefore, be said that Scotland, in addition to being the most religious and most drunken nation in Europe, is also the most keenly bent on the acquisition of wealth, and, at the same time, the least guided by intellectual and moral principle in her means of pursuing it. This last charge is not warranted by facts; but it has acquired a degree of plausibility by the malpractices daily disclosed in our Bankrupt Courts, and for which it becomes us to find a check and a remedy.[5]

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[1] The King's Somborne Schools.

[2] "Lessons on the Phenomena of Industrial Life, and the Conditions of Industrial Success," edited by the Rev. Rich. Dawes (Groombridge & Sons).

[3] See an account of the above and similar schools in Part Second, chap. vii.

[4] See an enumeration of Mr Ellis's works in Part Second, chap. vii. 4.

[5] From the *Scotsman* of April 6th 1858, being part of one of two leaders, written during the last year of George Combe's life, showing, at the age of 70 years, unabated intellectual vigour, and the same healthy and interest in the progress and extension of Education. The ot found, Part Fifth, chap. iii.

2. THE NEED OF THIS INSTRUCTION FOR THE EXERCISE OF POLITICAL FUNCTIONS.

The great political power of the masses.

The institutions and actual condition of the people of the United States exhibit, at present,[1] a heterogeneous aspect to a reflecting mind. The institutions are democratic in a high degree, for, with a few exceptions, political power is placed in the hands of every man above twenty-one years of age, except he be absolutely insane, a pauper, or a convicted felon, without regard to his wealth, character, or mental attainments. This is not merely a theoretical arrangement on paper, but a practically working system. In point of fact, the masses make and unmake the laws, and every interest of the State is placed at their discretion. One ignorant man is not a fit ruler for a great nation; nor are ten ignorant men, or a thousand, or ten millions of ignorant men, more fit to wield successfully the destinies of a great people than one. Numbers do not increase their knowledge, while they add to their confidence and power. Moreover, numbers increase their capacity for evil, and diminish it for good, because they keep each others' ignorance and presumption in countenance. The people become formidable, also, in the fierceness and energy of their passions, in proportion to their numbers, when one common impulse moves them.

Their education requires to be broadened and improved.

These points are so plain, that it is almost unnecessary to state them. Nevertheless, I daily meet with excellent persons who seem not to perceive their consequences. Education, history, and habit, and, above all, the daily example of Europe, have filled their minds with the idea of a labouring class, for whom instruction in reading, writing, and arithmetic, with moral and religious training, is all that is necessary, and a dominant class whose education should be more extensive, to fit them for higher duties; overlooking the palpable fact, that in Europe the better educated class rules the less instructed, while in the United States the more ignorant governs the more enlightened. I have seen men of sense and understanding regard my views as obviously utopian and absurd, when I ventured to express the opinion that both the quantity and quality of instruction communicated in the common schools of the United States, and even in Boston, is fitted much more for a government like that of Austria, than for that of the United States! The

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[1] From 1838 to 1840, when George Combe visited America.

Austrian Government does not object to its subjects being taught reading, writing, arithmetic, and geography, because these are only the elements of knowledge, and do not necessarily imply any practical results in action.

The peculiar need of this in a democracy:

The democratic institutions of the United States are only now beginning to develop themselves. The generation of 1775 was trained under a monarchy, and they had the feelings and habits of Englishmen. When their independence was achieved, their mental condition was not instantly changed. Their deference for rank and for judicial and legislative authority, continued nearly unimpaired; George Washington took the place of George III., and the public authorities elected by themselves came as objects of respect, in place of those named by the English governors. The leading men of each State suggested or proposed candidates for public offices, and the people, as a general rule, adopted them. In this state of things, the best educated class continued to rule. But the condition of affairs is now changed. The generation trained to obedience under monarchical institutions is extinct; a race occupies the field which has been reared under the full influence of democracy. The people worship themselves, as the fountains equally of wisdom and of power. They bend all institutions in subserviency to their own views and feelings. They are no longer led by, but they often dictate to, the wealthy and highly educated. Their own education, however, remains essentially unchanged: reading, writing, and arithmetic are its staples, as in the days of yore! This is an error of the most portentous magnitude, and it is astonishing how so many persons remain blind to it. There are still living a few remnants of the old Federalists, who desire to see the people happy and contented as labourers, but who are as averse to their thorough education as an English tory would be in similar circumstances. These worthy men forget that their dreams of popular felicity combined with ignorance can never be realised in this country, for the people have obtained power, and they love to wield it.

Where it should be the most instructive and practical possible;

The education provided for them, therefore, in their common schools, should be the most instructive and practical that human wisdom can devise; for here the masses need every possible light enable them to discern their true interests in the management of the State. Their governors and legislators are their deputies, and m obey them. Men of great minds may no doubt lead the mass although ignorant, to good; but in proportion to that ignorance the risk that bad men of powerful talents will lead them to evil.

is gratifying, however, to perceive that a large number of enlightened individuals are deeply imbued with these convictions, and are labouring to render them general. Still they have a mighty task to accomplish, before they prevail in reducing them to practice.[1]

To guard against ignorant impulse;

In the United States, you need not only education, but an education that shall communicate to youth the knowledge, maxims, and experience of age. Here you commit political power to the hands of nearly every man who has attained majority. Your population doubles every twenty-three or twenty-five years. The actual majority of your voters is probably under thirty-five or thirty-six years of age. There is no other country in the world which is ruled by men so young and so inexperienced. I was told before I came here, that the Americans are the most excitable nation on the globe; that you take fire in a moment, and instantly rush to action, whether it be in speculation, in legitimate enterprise, in war, or in political change; and since my stay among you, I have heard the deep-toned war-cry uttered with a force and unanimity which is full of fearful omen.[2] And the cause of this may be discerned. The mind, till thirty-five, acts more under the impulse of the feelings than under the guidance of intellect. By the very laws of our nature, Combativeness, Destructiveness, Self-Esteem, Love of Approbation, and Acquisitiveness, are then more energetic than they are at fifty or sixty; and at that period also experience is most deficient. Life has not been long enough to enable us to accumulate wisdom, to detect the illusions of passion or of vain glory,—to supply the deficiencies and correct the errors of an imperfect education.[3]

To decide and vote in great questions.

In the election which took place in November 1839, the question of the currency was actually brought to the polls in the State of New York. The mottoes were—banks and paper currency on the one side—hard specie and sub-treasury laws on the other. These are questions on which Dr Adam Smith, Ricardo, M'Culloch, and the profoundest political economists, have differed in opinion. Does your education enable your people to understand them, and decide on them? No! Yet your people *act* whether they understand them or not. They vote the supporters of paper into power; and paper flourishes. If evil ensue, they vote the advocates of specie into power; and paper and credit go to the wall. They try the experiment. But what an awful experiment! How many thousands of individuals and families are ruined by the violence of every change![1]

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[1] America, vol. i., pp. 161–4.

[2] This refers to the dispute with England, in 1839, regarding the Maine boundary, which then roused a strong war feeling in America, fanned by Clay and Webster. (See George Combe's "America," vol. ii. p. 116, vol. iii. p. 48, &c.)

[3] America, vol. iii. pp. 407–8.

Educated and uneducated citizens compared.

A well *instructed* citizen will consider the influence of any law on the general welfare before he consents to its enactment, and a well *trained* citizen will not only obey that law when enacted, but lend his whole moral and physical energies, if necessary, to enforce its observance by all, until repealed by constitutional authority. An *ill instructed* citizen will clamour for the enactment of any law which promises to relieve *him* from an individual inconvenience, or to confer on him an individual advantage, without much consideration concerning its general effects; and an *ill trained* citizen will seek to subject the magistrates, judges, and the law to his own control, that he may bend them in subserviency to his interest, his ambition, or his inclinations, from day to day, as these arise and take different directions. The *ill trained* citizen takes counsel of his self-will; and self-will, uninstructed and untrained to the guidance of moral principle, leads to destruction.[2]

The submission of candidates to ignorant prejudices.

To gain popularity, the public mind must be addressed on its most accessible side. The great majority of American voters are young, ardent, impulsive, active, and practical, but deficient in profound and comprehensive views, and also in the capacity of pursuing a distant good through temporary obstacles and difficulties. Their education, in relation to their powers and duties, is very defective. To gain the favour of a people in this condition of mind, actual fitness for office, with honesty and independence in the discharge of public duty, do not of themselves suffice. The candidate must render himself acceptable to the electors individually; he must address their predominant feelings, enter into their leading aversions and predilections, and attach himself warmly to the party or cause which he knows them to regard with the highest favour. He may vouch for his own fitness for office, and his own certificate will often be received, provided, in other respects, his conduct and principles are approved of. If he egregiously fail in the discharge of his public duties, he will be turned out of office at the end of the term for which he was appointed; but the most conscientious and skilful execution of his duties will not, in general, secure the endurance of his tenure, if he publicly advocate unpopular opinions, although altogether unconnected with his station, or if he belong to a party which has lost public favour and been displaced from power.

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[1] America, vol. iii. p. 409. George Combe wrote specially on the Currency, and, although only in a pamphlet, gives, according to Professor Nichol of Glasgow, "the whole principles of the subject." (See Life of George Combe, in the "Imperial Dictionary of Universal Biography": London; William Mackenzie.)

[2] America, vol. iii. p. 253.

The education required for political functions.

The best remedy that can be proposed for the evils now described, appears to me to consist in a higher education and a better training of the electors: If they were thoroughly instructed in youth, concerning the laws which regulate the prosperity of nations; in the qualities of the human mind; and in the indispensable necessity of judgment and integrity in public officers to the right management of their affairs,—higher qualities would be required in their public men in order to gain their favour, and useful and faithful public servants would be retained in possession of their offices, out of respect to their fitness alone. The idea that it is possible to educate and train a people to act in this manner is regarded by many persons as altogether visionary and utopian; but to deny this is to maintain that man is not a rational being. A certain advance in the knowledge of his own faculties and of the external world, and of their adaptations to each other, was necessary before the development of his rational nature could fairly commence, and this knowledge has not yet been generally communicated to the young, nor have they been trained in accordance with it. That, in their actual condition, their actions and judgments should partake of the character of impulse and direct perception, is inevitable; but their capacity to advance to a higher state of civilization is not by this circumstance necessarily excluded.

The danger of advocating reforms with the uneducated.

The danger which besets an individual *in his private capacity* in consequence of openly advocating unpopular opinions, may be best elucidated by referring to special instances. If any citizen propose improvements in education for which the public mind is not prepared, those individuals whose interests or whose pride would suffer, or whose habits of thinking and acting would be invaded by the change, naturally oppose them. The common schools are placed under the management of directors and inspectors chosen by the people, and the reformers must obtain these offices before they can give effect to their benevolent designs. But the people, being ignorant of the nature and utility of the proposed changes, are easily operated upon by the insinuations, misrepresentations, and declamations of the hostile parties, who are scattered everywhere among them, and who by these means experience little difficulty in rendering the reformers unpopular, and thus preventing their election. The gentlemen who told me that the proposal to invite Wilderspin to the United States, would retard, instead of forwarding, the desired improvements in training, were sound in their judgment; because the prejudices of the people against foreigners, and their dislikes to innovation in their school systems, would, while they were ignorant of the nature of the proposed improvement, have ensured the exclusion of its projectors from office, and placed its opponents in power over the schools.

This remedied only by rational education.

The remedy for this evil is gradually to open up the subject to the public mind in lectures and through the press: or to carry the scheme into execution in some private seminary, and then show it to the people in action. After they comprehend its advantages, they will adopt it. And accordingly, the project of improvement by training is not abandoned by those who perceive its value; but they are proceeding prudently to prepare the people to receive and sanction it. So far from this condition of things being an unmitigated evil, it is attended with many benefits. It leads moral reformers to consider their measures thoroughly, and by anticipating opposition, to detect the weak points of their schemes. It also imposes on them the necessity of addressing the reason and moral sentiments of the people, and of *thus aiding in cultivating their rational nature;* and, in my opinion, the ultimate test of the merits of all institutions, is the degree in which they promote the accomplishment of this end.[1]

Education should train the higher social faculties;

One defect in the American institutions and social training at present appears to me to be, that they do not sufficiently cultivate habits of deference, prudence, and self-restraint. They powerfully call forth all the faculties that subserve the interests and ambition of the individual; but they leave the higher social qualities imperfectly exerc[illegible]nd ill-directed. There is no training of Veneration, excep[illegible]ious tuition, which is too often confined to vague moral ins[illegible]d to the points of faith regarded as essential to salv[illegible]ing allowance for individual exceptions, it may be stated, that an American young man, in emerging from school, has scarcely formed a conception that he is subject to any natural laws, which he must obey in every step of his progress in life, or suffer. He has not been taught the laws of health, the laws by which the production and distribution of wealth are regulated, or the laws which determine the progress of society; nor is he trained to subject his own inclinations and will to those or any similar laws, as indispensable to his well-being and success. On the contrary, he comes forth a free-born, self-willed, sanguine, confident citizen, of what he considers to be the greatest, the best, and the wisest nation on earth, and he commences his career in life, guided chiefly by the inspirations of his own good pleasure. He votes and acts on the destinies of his country in the same condition of mind. In Britain, we cannot boast of much superiority in practical education, but our young men are not ushered into life so early; they are trained, by the institutions and circumstances by which they are surrounded, to a greater exercise of prudence and self-restraint, and few of them wield political power.

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[1] [illegible]ns, vol. iii. p. 284.

And produce disciplined intellect and feelings.

All our functions and faculties, bodily and mental, are regulated by the Creator according to fixed laws; within certain limits, they produce enjoyment, and beyond these, misery. By teaching children this view of their own constitution, and also rendering them familiar with the physical, organic, and moral laws instituted by the Creator, and *by training them to obey them*, that reckless self-confident spirit which now animates many of them in the United States, would be supplanted by a disciplined understanding and regulated affections. Their institutions render them indisposed to reverence man, or human wisdom; but still they may venerate God, and practically fulfil his laws. Indeed this species of moral and intellectual discipline appears to me to be indispensable to the permanence and success of a democracy. If the Americans do not adopt it, and rely on it as their sheet anchor, no other means which ordinary sagacity can discover, will lead them safely through the perils that will rise thicker and thicker in their path, in proportion as their population becomes more dense.[1]

[Of the value of instruction and training, as thus advocated by George Combe, in the "Principles of Social and Political

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[1] "America," vol. i. p. 235. How true the foregoing strictures on American Education and its relation to social and political life are of our own in Great Britain, and how wise and good the remedies advocated!

The subject should be taught in all schools.

Science," or "the Science of Human Well-being," as it is well designated by Mr William Ellis, its founder, there can be no doubt in the mind of any one that has looked into its nature and aims, and has reflected on the evils which ignorance of these principles has entailed and is entailing on our people. As William Lovett truly says, "It is to be greatly regretted that this important subject is not yet generally taught; and until it is made a necessary part of education, I fear society will have to pay the penalty of this neglect, in the social wrecks so many of our people become. For, being turned out of their schools without any notion of the conditions to be fulfilled for securing *well-being*, nor any knowledge of the duties they owe to society, social or political, we need not wonder at the ignorant blunders so many of them make."[1] The right place to begin such teaching is in our schools, while the mind is susceptible and thirsting, and habits of thought and action are being formed, and while there is an opportunity—the only one possible to the mass of our population—of being introduced to such regulating principles of daily life. "If it is in and through the mind we must operate," says Professor Hodgson, recommending the subject, "we must do so at that time of life when the operation is at once easiest and most effective, in order that error and evil may be, as far as possible, prevented, not their consequences bunglingly repaired; in order that not only evil may be prevented, but that good may be ensured, by the early inculcation of sound principles, and the early formation of habits therewith according. The habits must rest on the foundation of principles; and these, to deserve the name, and to have any influence in act, must be thoroughly comprehended, digested, and assimilated—made into the likeness, and fashioned into the very substance of the mind. So that, in entering upon busy life, the youth shall not be left to scramble through error and disaster, for the costly and tardy wisdom of experience, but shall understand, and be able and ready to adapt himself to, the system of things in which he is to take his place, and through which he has to work his way to personal independence and social usefulness."[2]

It can be made simple and interesting.

That the subject can be taught to young children with great ease and simplicity, and with the highest interest, has been abundantly proved in the experience of all who have tried it, and in the schools where it has formed a regular branch of education, an account of which will be found in the following chapter. To Mr William Ellis is due the merit, not only of introducing the subject into our common schools, but of so broadening it as to make it truly "the Science of Human Well-being," and of simplifying what was previously a dry and abstruse subject, and rendering it easily understood by children.

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[1] "Life and Struggles of William Lovett," p. 361 (Trübner & Co., London).

[2] Two lectures on the "Conditions of Health and Wealth Educationally Considered" (Lecture Second); originally published in 1860, and about to be republished, as they eminently deserve to be.

It should form part of the preparatory course of teachers.

An important step towards the introduction of the subject into schools would be the thorough training of our teachers in its principles, as a part of their preparatory course, principles which "ought to be," as the Dean of Hereford remarks, "'familiar as household words' to all teachers of youth, who should have the power of making such knowledge equally familiar to their scholars, about to pass from under their training and teaching to participate in the actual business of industrial life."[1] The subject was recommended for teachers, in the Report of the Commissioners appointed to inquire into the State of Popular Education in England, in 1861. Speaking of the syllabus of the Training Colleges then existing, they say—"We feel bound to state that the omission of one subject from the syllabus, and from the examination papers, has left in our minds a painful impression. Next to religion, the knowledge most important to a labouring man [why confine the remark to the labouring man?] is that of the causes which regulate the amount of his wages, the hours of his work, the regularity of his employment, and the prices of what he consumes. The want of such knowledge leads him constantly into error and violence, destructive to himself and to his family, oppressive to his fellow workmen, ruinous to his employers, and mischievous to society. If some of the time now devoted to the geography of Palestine, the succession of the kings of Israel, the Wars of the Roses, or the heresies of the early Church, were given to Political Economy, much valuable instruction might be acquired, and little that is worth having would be lost." And they recommend "that certain alterations be made in the present syllabus of studies, and, in particular, that more attention be given to Political Economy and other subjects of practical utility," specially mentioning the principles of Physiology.[2] It is gratifying to find that the subject has since then been introduced, to some extent, into the course for teachers at the Normal Training Colleges, which includes, in the second year's syllabus for male teachers, "Ele-

It is represented in Normal Colleges.

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[1] Preface to "Phenomena of Industrial Life," by Dean Dawes.

[2] Report of the Commissioners for 1861, pp. 127 and 546.

mentary Questions on Political Economy"; although it is only slightly represented in the syllabus for females, under the important subject of Domestic Economy, as "Household Expenses and Investment of Money." It is sincerely to be hoped that a fuller course, as exhibited in the works of Mr William Ellis, will be adopted for all teachers; and that the subject will be introduced and fostered in all our schools, at least as one of the "Specific Subjects," like other branches of science for which grants are paid by Government. As will be seen in the next chapter, the want of this encouragement, under both the Education and the Science and Art Departments, and the pressure laid on other subjects, have crushed Social Science out of schools where formerly it was regularly taught.

Early advocates of the subject: In Scotland;

The subject was earnestly advocated from an early period by George Combe, who not only wrote on it himself, especially in his "Moral Philosophy," but, on every occasion, recommended its exposition and teaching as exhibited in the writings of Mr Ellis, and introduced it into his own school in Edinburgh. It was also recommended in the pages of the *Phrenological Journal*, during its existence from 1823 to 1847; and by Mr Charles Maclaren, editor of the *Scotsman*, in a series of articles, being "Suggestions for the Improvement of Education," in 1828 and 1829, and in certain Advices to the Labouring Classes, in 1830.[1] In 1835, George Combe's lectures and works, and the efforts of Mr James Simpson, gave rise to the "Edinburgh Society for the Diffusion of Moral and Economical Knowledge," which arranged courses of popular lectures on Education, Physiology, Social Economy, and other subjects.

In England.

Mr Ellis began the teaching of the subject in schools in 1846, and instituted it as a special and important part of the work of the Birkbeck Schools, when founded in 1848, in which it continues to hold the same rank, and to be successfully taught. It also formed a special branch of instruction in all the Secular schools, as will be seen in the next chapter. William Lovett frequently and earnestly recommended its study to the working men of Britain, in schools and elsewhere, as one of the best means of raising their condition; and he published, in the *Beehive*, in 1868, a series of articles on it, called "The A B C of Social Science in Twenty Lessons," which, as he acknowledges, "had their origin in the teachings and writings" of William Ellis. The subject has also been well advocated by Mr Benjamin Templar, once Head-master of the Manchester Secular Free School, where it formed a prominent subject; and by the late Mr Shields of the Peckham Birkbeck Schools, both of whom have written text-books on it—Mr Templar, in particular, being a vigorous pleader for its universal teaching, before the Social Science Association, and through the press.[1] One of the most powerful and enthusiastic advocates for its study, in both schools and universities, has been Dr Hodgson of Edinburgh, the first Professor of the subject in Scotland, who has spoken and written on it in every variety of form, for more than forty years. Since its introduction into schools by its earlier students, the subject has made great progress, and has engaged the attention of some of the best minds, not only in developing its principles, but in adapting these for general instruction.[2]

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[1] Now republished in his "Select Writings," edited by Cox and Nicol (Edinburgh: Edmonston & Douglas).

Text-books on the subject:

There now exist many good works on the subject, for general students, and for teachers and scholars, of which the following may be mentioned:—

1. *For a general exposition of the nature and aims of Social and Political Science*—

On its nature and aims;

William Ellis's works generally; especially his "Education as a means of Preventing Destitution: with exemplifications from the teaching of the Conditions of Well-being and the Principles and applications of Economical Science at the Birkbeck Schools" (London: Smith, Elder, & Co.), which contains a chapter on "The Conditions of Well-being as taught in the Birkbeck Schools, and as they ought to be taught everywhere," and another on "Reasons for insisting that Instruction in Economical Science shall no longer be excluded from our schools."

Professor Hodgson's "Two Lectures on the Conditions of Health and Wealth Educationally considered," delivered in 1859, and about to be republished; and a lecture by him "On the Importance of the Study of Economic Science," delivered in the Royal Institution of Great Britain in 1854, and now included in "Modern Culture," edited by Dr Youmans (London, Macmillan & Co.)

The article "Social Economy," by Dr R. M. Leverson, in Kiddle and Schem's "Cyclopædia of Education" (New York, E. Steiger; London, Sampson Low & Co.)

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[1] See the account of the Manchester Free Secular Schools (No. 6) in next chapter.

[2] See some good remarks by Herbert Spencer on the "Science of Society" as a branch of popular education, in his work on Education (Williams & Norgate), p. 23, &c.; and by Scott Russell in his "Systematic Technical Education for the English People" (London: Bradbury, Evans, & Co.), in various parts.

Herbert Spencer "On Political Education," in his "Essays Scientific, Political, and Speculative," 2d series; also included in "Modern Culture."

2. *Text-books on the subject for general students and for teachers*—

For general students;

William Ellis's works:—"Progressive Lessons in Social Science,"[1] second edition, fcap. 8vo, 1s. 6d.; "Introduction to the Study of the Social Sciences," fcap. 8vo, 2s.; "A Layman's Contribution to the Knowledge and Practice of Religion in Common Life; being the Substance of a Course of Conversational Lessons introductory to the Study of Moral Philosophy, post 8vo, 7s. 6d.; "What am I? Where am I? What ought I to do? How am I to become qualified and disposed to do what I ought?" fcap. 8vo, 1s. (London, Smith, Elder, & Co., 15 Waterloo Place).

George Combe's "Moral Philosophy" (Maclachlan & Stewart).

Dean Dawes's "Lessons on the Phenomena of Industrial Life, and the Conditions of Industrial Success," 3d edition (London, Groombridge & Sons).

Mrs Marcet's "John Hopkin's Notions on Political Economy," 2d edit. (London, 1833).

Miss Martineau's "Illustrations of Political Economy," a series of popular tales.

Henry Fawcett's "Manual of Political Economy," 4th edition (London, Macmillan & Co.)

Whately's "Introduction to Political Economy."

John Macdonald's "Survey of Political Economy" (Edinburgh, Edmonston & Douglas).

The greater works of Adam Smith, John Stuart Mill, &c.

3. *Text-books for scholars and young students.*

For young students.

William Ellis's "Outlines of Social Economy," 3d edit. (London, Smith, Elder, & Co.)

Benjamin Templar's "Reading Lessons on Social Economy" (London, Jarrold), which George Combe considered "a valuable contribution to education; sound, clear, and practical, and such as an average teacher could easily use"; and which he specially praises for its simplicity.[2]

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[1] Mr Ellis writes to the editor that this work "gives the best idea he ca give, with the pen, of his course of thought and teaching."

[2] Letter to the author, of 2d May 1858.

"Helps for the Young in their Efforts at Self-Guidance," edited by the Rev. W. Jowitt (London, Longmans).

"Lessons in Social Economy" (which are simple and practical), by the late Mr W. A. Shields, of the Peckham Birkbeck Schools, in the Advanced Reading-Book of Constable's Educational Series (Edinburgh, Thomas Laurie).

Mrs Fawcett's "Political Economy for Beginners," and "Tales in Political Economy" (London, Macmillan & Co.)

Dr A. H. Dick's "Outlines of Political Economy" (William Collins, Sons, & Co.)

Professor W. S. Jevon's "Primer of Political Economy" (London, Macmillan).

Dr R. M. Leverson's "Common Sense; or, First Steps in Political Economy" (New York, 1876).

J. J. Champlin's "Lessons on Political Economy" (New York).

The action of teachers in regard to it.

It is devoutly to be wished that teachers will take up the subject with the earnestness which its bearing on the happiness and progress of the country should inspire. A very praiseworthy effort at doing this was made in 1859, by the formation of "The Schoolmasters' Social Science Association," the objects of which were—"the study of Social Science and how to teach it, as a means of raising the intellectual and professional status of teachers, of rendering them more efficient in the teaching and the training of the young, and thereby of more beneficially influencing society; and the study of kindred subjects bearing upon the improvement of the teacher's Art, in connection with the Laws of the Well-being of Society, such as Physiology and Health." The patrons of the Association were Lord Ashburton, Sir James Clarke, William Ellis, Dr Hodgson, and others; the committee included some of the best teachers in the country; and the opening meeting was presided over by Lord Brougham.[1]

The special form of the subject recommended.

In teaching the subject in schools, the special form of it, as recommended by George Combe in the present chapter, and as expounded in the works of William Ellis, is the one that should receive the attention of teachers, and be introduced into schools[1]—which correlates and brings to bear on Social and Political Science, the whole of the mental faculties, the sympathetic as well as the self-regarding, "a correlation first illustrated by the teachings of William Ellis, which has been more or less successfully followed up by his disciples; so that, to-day, the science, when properly taught, instead of warping the minds of its students into a one-sided egoism, develops a largeness of views, a generosity of sentiment, and a soundness of judgment, perhaps unattainable through any other study."[2]

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[1] The prospectus of this Association is contained in the Appendix to Professor Hodgson's "Two Lectures on the Conditions of Health and Wealth, Educationally considered." It is to be regretted that, from various causes, this excellent effort to interest teachers in this subject has been given up for some time. It is to be hoped that a similar movement will be more successful.

The manner of its teaching.

The manner of its teaching should receive special care, as on its character depends the success of the subject, as the admirable educational instrument it may be made. It should be based and conducted throughout on facts within the experience of the pupils, and be taught on the true principle of all teaching, by continual reference to the concrete, in the manner of object lessons. The form of teaching is well indicated in Mr Ellis's works, and in Mr Templar's. "Socratic questioning" should also be largely employed.[3] —*Edit.*]

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[1] The works of Benjamin Templar, W. A. Shields, Dean Dawes, Rev. W. Jowitt, and Dr Leverson, already mentioned, are founded on and embody William Ellis's principles.

[2] Dr R. M. Leverson, in Kiddle and Schem's "Cyclopedia of Education" (New York, E. Steiger; London, Sampson, Low, & Co.), p. 784.

[3] This is explained in next chapter, p. 237. See also some good remarks on its teaching, by Dr Leverson, in the Cyclopedia article mentioned above.

CHAPTER VII.

EFFORTS, IN BRITAIN, AT PROVIDING THE BROADER EDUCATION HERE ADVOCATED, WITH WHICH GEORGE COMBE WAS CONNECTED.

By the Editor.

Efforts at securing a broader education.

EFFORTS have been made, in different parts of the country, to provide a broader education than common, to secure a truly National Unsectarian system, and to exemplify the kind of school machinery and school work by which the education of the country should be carried out, on the "Secular" school basis. These form an interesting and important chapter in the history of education in this country, and one that has had a strong influence on educational progress, in leading to the present broader solutions of educational questions, in Parliament and in the country. With most of these efforts George Combe was more or less intimately connected, and in some of them he was a prime actor. It will be well, therefore, to give a short account of them, in order not only to help to complete the story of his work in Education, but to illustrate his broad principles in actual practice in school.

1. THE SECULAR SCHOOL IN EDINBURGH, FOUNDED BY GEORGE COMBE.

The founding of the Edinburgh Secular School.

As already told in the Introduction, in conjunction with his friend Mr James Simpson, Advocate, and others, at the end of 1848, George Combe determined to found a school in Edinburgh, for teaching the broader scheme of education he had so long advocated, on the model of the first Birkbeck School, founded five months before, in connection with the London Mechanics' Institution. The following is the prospectus, written by George Combe and freely circulated, regarding the proposed school:—

Its Prospectus:

"*Prospectus of a School for the Secular Education of Boys.*

"*Promoters*: George Combe, 45 Melville Street; James Simpson,
33 Northumberland Street.

"The year 1848 will long be memorable in history for the revolutions by which the Continent of Europe has been agitated, and from which the British Islands have, although not without alarm, escaped.

The state of society in 1848.

Ancient dynasties and governments have been overthrown by the efforts of armed citizens of the middle and lower classes of society, whose object has been to found new political institutions, more conducive, in their opinion, to individual happiness and social prosperity, than those which they have destroyed. But hitherto their efforts have not been crowned with success. Wreck of property, derangement of trade, loss of employment to the operative classes, general suffering in the present time, and fear of evil for the future, are the chief consequences hitherto produced by these convulsions.

The causes of this.

"Among other causes of this unfavourable condition of European society may be reckoned the imperfect education of the great body of the people. In many countries, their instruction has been greatly neglected, and even in those in which the best efforts have been made to teach them, the knowledge imparted has rarely embraced an exposition of the natural laws by which individual and social well-being is determined. Moreover, they have not been trained to submit, in their practical conduct, to the requirements of these laws, as necessary conditions of prosperity.

The subjects proposed for the new school.

"Believing that the general instruction and training of the young are the best remedies that can be applied to existing evils, and the surest protection against future misfortunes, it is proposed to establish a School for Boys in Edinburgh, in which the following subjects will be taught, in the expectation that, if it prove successful, it will lead to the institution of other similar Seminaries; namely:—

"English Reading, Writing, Arithmetic, Geography, History, Book-keeping, and the Elements of Mathematics and the Physical Sciences.

"A Knowledge of the Natural Sources of Wealth, and of the Natural Laws which govern its production and distribution, as unfolded in the science of Political Economy.

"A Knowledge of the Constitution of the Human Body and Mind and of their relations to external objects, and the Natural Laws by which their functions are regulated, as these are unfolded in the sciences of Physiology and Phrenology.

"The practical applications of these branches of knowledge to the conduct of individuals will be taught, with a view to enable the young to comprehend the manner in which the laws of God's providence determine their health and sickness; their individual and domestic happiness; their social condition; their success or failure in business; and the physical, moral, and economical condition of their offspring. From this knowledge will be deduced also conclusions concerning their temporal rights and duties as individuals and members of society.

The moral training aimed at there.

"Particular attention will be paid to Moral Training, based on the principle, that the *mere teaching of moral precepts* is not sufficient, but that the young must be trained to carry them out in practice.

"One great object of the teaching in these Schools will be to convey to the minds of the young a perception of their actually living under a scheme of Divine Government which favours temperance, industry, intelligence, morality, and religion, in this world; and to train them to refer, in their judgments of men and things, and in their own actions, to the laws by which this government is maintained and enforced.

"The School-Hours will be from Nine in the Morning till Three in the Afternoon (Saturday excepted), with the usual interval at Twelve o'clock.

The prevalent opinions on education.

"*Note in Explanation of the Foregoing Prospectus.*—The progress of National Education is at present obstructed, and effort is paralysed, because no general agreement has been reached as to the things that should be taught in schools for the people. Some individuals consider Reading, Writing, and Arithmetic, with Moral and Religious Instruction, to constitute a sufficient education for the labouring classes. Others regard instruction in the Natural Sciences, in addition to these branches, to be necessary for their proper cultivation. Some, who concur in this opinion, nevertheless view Religion as the only sound basis of all education, and desire to teach the catechism of their own church, as well as the sciences of nature. Others, again, regard Reading, Writing, Arithmetic, the Physical Sciences, and also Religion and Morality, to have a basis in the constitution of the human faculties and of physical nature, and think that these may be usefully taught as Secular education, irrespective of catechisms, leaving Dogmatic Religion to be instilled by the parents and clergymen of the pupils.

The views of Chalmers and Whately compared.

"These differences of opinion appear in the highest quarters, and it is not to be wondered at that humbler men are perplexed. For example, the late Dr Chalmers[1] and Archbishop Whately appear to be at variance on what must necessarily be a first and fixed principle, lying at the bottom of all sound action on the subject of education, viz., whether it is necessary to teach the people a knowledge of the laws of nature, under the idea that these determine their physical, economical, and physiological condition; or if it be sufficient to teach them Religion and Morality. In an article in the third number of the *North British Review*, on the 'Political Economy of the Bible,' Dr Chalmers seems to lay down the doctrine that it is *not necessary* to teach the laws of Political Economy to the people, but only the morality and religion of the Bible, and that public prosperity will result from the sum of private duties duly discharged, in virtue of the governing laws of Providence.[1] Archbishop Whately, on the other hand, in his address, delivered on the 19th of June 1848, to the Statistical Society of Dublin, states that, in his opinion, it is a mistake to suppose that 'even sound religion and the purest morals would secure a people from destructive revolutions, if they possessed not a competent knowledge of those circumstances on which the welfare of empires depended.' 'It was not religion or morality that would teach them whether certain things *were possible*. If they were possible, they ought to be accomplished. If *impossible*, Political Economy (and other sciences) would show that they were so.'

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[1] Dr Chalmers died in May 1847, the year before the above was written.

"Religious" and Secular Education compared.

"These two opinions represent the two bases on which most of the advocates of Religious education and of Secular education take their stand. If any one will visit our parish or other schools which are under the chief guidance of the clergy of any denomination, or of religious societies, they will find that the instruction communicated in them consists mainly of reading, writing, arithmetic, the religious catechism of the sect, and general moral and religious instruction, drawn from it and the Bible; but omitting, to a great extent, the doctrine of Physical, Physiological, and Economical causation,[2] on the right understanding of which,—in addition to Morality and Religion,—according to the Archbishop, the prosperity or adversity of the individual in this life really depends. These schools are constituted on Dr Chalmers's principle, that if individuals discharge their moral and religious duties aright, God's Providence will evolve prosperity, without their knowing how. The advocates of Secular education, on the other hand, maintain that it is a part of God's Providence to connect suffering and enjoyment with certain natural causes which He has instituted and adapted to the nature of man; that the systematic exposition of these causes and their effects is not contained in the Bible and catechism; that, nevertheless, an adequate knowledge of these causes and their effects is necessary before temporal prosperity can be reached, and before even moral and religious duty, in relation to the affairs of this world, can be fully understood; and that, therefore, any religious teaching which omits science is incomplete for secular purposes. Nay more, that as these natural causes of prosperity and adversity have been instituted by God, it is actually a part of moral and religious duty to study them, and to act in conformity with them; and that all existing schools, in which this teaching is omitted, are really, so far, deficient in communicating moral and religious instruction.

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[1] Dr Chalmers broadened his views of National Education, after writing this article in 1845, and recommended a Secular system and Science. See Appendix for an expression of them.

[2] See George Combe's ideas as to Causation explained, p. 40.

Dr Chalmers's view incomplete.

"Dr Chalmers's view appears to us to be not so much erroneous as incomplete. God's Providence is *moral*, and, as a general rule, prosperity is attached to moral, and adversity to immoral conduct; but the defect of Dr Chalmers's theory lies in this—that the elements and conditions of man's well-being in this world are *not exclusively moral;* and, in this respect, there is a great distinction between temporal and eternal happiness. The elements and conditions of the latter are *wholly moral* and *religious;* and the Bible is, therefore, in regard to them, generally viewed as the only and all-sufficient guide; but not so with respect to man's temporal interests. These depend on *physical*, on *physiological*, and on *economical* causes, as well as on moral and religious causes; and, in many instances, an individual is not in a condition to judge soundly regarding *what is his duty*, if he be ignorant of the first, second, and third of these departments of causation.

Man's secular happiness dependent on secular causes.

"For example — The Bible explicitly declares that 'he that provideth not for his own is worse than an infidel.' If the individual who reads this injunction be a farmer, he may deduce from it the inference that he is required by Scripture to manage his land in the best manner, that he may draw from it as large a provision as possible for his family; but the Bible tells him nothing concerning the most advantageous method of draining, manuring, labouring, and cropping his fields. Science, however, which means knowledge of God's natural laws and works, will teach him this; and, therefore, before he shall be able competently to fulfil this item of his moral and religious duty, he must study Agriculture, as well as Religion and Morality. Again—'providing for his own' implies, that he shall rear his children in the best possible health; but the Bible does not fully instruct him concerning the influence of improper diet and clothing, of ill-aired and crowded rooms, of unhealthy localities, of too much study, and other physical and moral influences on the health of his offspring. Physiological

Man's secular happiness dependent on secular causes.

science, however, would communicate to him this information, and, therefore, a knowledge of it also is necessary to him before he can successfully fulfil this scriptural precept. Farther, in order to be able to study either Religion or Science with intelligence, and to practise with advantage the rules of conduct which they dictate, the intellectual faculties must be cultivated and trained to observe, to reason, and to act. But the Bible does not contain an exposition of the art of teaching and training the mental powers. Science, however, does so; and again it appears that in order to cultivate even the religious, moral, and intellectual faculties of children, and to train them to proper action, it is necessary to go beyond the precincts of the Bible. This is no disparagement to the Bible, because apparently it was not designed to absolve man from the duty of studying the Divine will, expressed in the constitution of nature, and presented to him for his investigation and guidance. On the contrary, one of the offices of Religion and Morality, in so far as this world is concerned, appears to be to enforce the study of nature and obedience to her precepts as a duty, in order that we may fulfil the Divine will in regard to our sublunary existence.

The importance of this principle in Education.

"We solicit attention to these considerations, because, until the points involved in them be decided by public opinion one way or the other, no progress can be made in this momentous question. If Dr Chalmers's view be both sound and complete, the advocates of Secular education should succumb; but if Archbishop Whately's principle be sound, then the adherents of Dogmatic Religious education may be expected to yield something to the claims of the people for a more extended instruction than in reading, writing, arithmetic, the Bible, and the catechism. If the Archbishop be in the right, we are defrauding the labouring classes of an important benefit of reason, by withholding from them an adequate knowledge of the causes of their temporal suffering or well-being; and it is unseemly to make zeal for our peculiar interpretations of Scripture an obstacle in the way of communicating this information, seeing that these interpretations have no necessary connection with the constitution of nature, and do not embrace the '*whole* counsel of God.'

This broader Education already begun.

"In London, the experiment of teaching the children of the working classes the elements of Political Economy and Physiology, in addition to reading, writing, and arithmetic, and omitting Dogmatic Religion, has been tried with success;[1] and an additional school embracing these branches of instruction has recently been instituted, under the patronage of the Earl of Radnor,[1] in connection with the London Mechanics' Institution: It is named the Birkbeck School.[2]

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[1] This refers to Lovett's National Hall School, described in this chapter, No. 4. In 1848 these three schools were opened in this order: Lovett's, or

"The promoters of the school described in the foregoing Prospectus desire to ascertain, whether or not parents belonging to the working classes of Edinburgh appreciate the advantages of a more extensive education for their children, than they have at present the opportunity of obtaining; and, with this view, the school before mentioned will be opened."

A preliminary meeting called regarding the school.

A preliminary meeting was held on the 27th of November 1848, at which George Combe entered at considerable length into the nature of Education generally, and of the special course that was to be adopted in the new school. The following is the report of the meeting, as given in the *Scotsman* of 2d December:—

"A meeting of such of the working classes as take an interest in Secular education, was held in the Freemasons' Hall, Niddry Street, on Monday evening, the 27th November. The meeting was called at the instance of Mr George Combe and Mr James Simpson, and the call was most heartily responded to, the room being crowded by a most respectable assemblage of the working classes.

Its object stated.

"Mr Combe stated that the object of the meeting was to consider the subject of Secular education. It was not intended as a meeting for discussion, or to put any resolution, or to pledge them to anything; but his design was to present to them the project of a school for the education of boys, on an improved plan, which it was intended to open in Infirmary Street, in the course of next week. In explaining the views which he held on education, they were not to understand that he was asking their concurrence in any particular views which he might state. He allowed every man to judge for himself. All that he proposed doing was to submit certain propositions, which he left to their own disposal. If they thought them useful, he claimed their support. If they dissented from them, he submitted to their right of private judgment, and did not find fault with them for not following him. Before explaining the nature of the school which it was intended to institute, he proposed to make a few remarks on the subject of education itself.

Feb. 28th; the first Birkbeck School, mentioned above, on July 17th; George Combe's, on Dec. 4th. Lovett had opened a Secular Sunday-school in 1843.

[1] The Earl of Radnor was then Patron of the Mechanics' Institution.

[2] See an account of this school, in this chapter, p. 231.

Secular and Spiritual Education defined.

"Education was generally divided into Secular and Spiritual; and in their day, they had had an extraordinary amount of discussion on the merits of Secular education, and whether there should be an education given to children apart from Religious instruction. As he should use the word 'Secular' on the present occasion, it would mean instruction concerning the things of this world; and it was intended to stand in opposition to Spiritual instruction, rather than Religious instruction, for Religious instruction might embrace the things of this world. Secular education, then, referred to the things connected with this life, and Spiritual instruction referred to the interests of eternity. They would understand that his present observations referred to the things of this world and to its interests.

Man's need of Education.

"The first question which he wished to submit to their consideration was this—What need had men of education at all? It might appear to many to be unnecessary to enter on this subject, but doing so would enable him the better to introduce the views on which this school was to be founded. Some of them were aware that, since he had last the honour of addressing a public audience in Edinburgh, he had made a visit to the United States, and had lectured to numerous audiences in that part of the world.[1] About eighteen months ago, he received a letter from a person in Lowell, in Massachusetts, where there were a great many cotton and spinning mills, as in Glasgow and Manchester. This individual put the question to him: 'As you have taken a great interest in the welfare of all classes, can you tell me how we, the working men of Lowell, are to be delivered from the iron hoof of capital; for we find ourselves here in the midst of great mill-owners, who are dividing yearly 15 and 20 per cent. from the profits of our earnings, while we have only a bare subsistence for our labour?' He sent an answer, and the first point which he endeavoured to explain was, what constituted capital. Capital, he understood, consisted of everything that was useful to man, produced by human skill and labour. He did not count water capital in a country like this where we had a superabundance of it, except when it was brought into our houses, where it became the representative of capital, in so far as the pipes and conduits that brought it in were capital.

This illustrated in regard to capital;

"In illustrating the advantages of capital, he instanced the cases of two men who should proceed to the United States, for the purpose of reclaiming part of the large tracts of country there that were not yet possessed by man—the one having capital in his axes and saws to cut down the trees, in food to support him, in harrows and ploughs to till the ground, and in other instruments by which he could render the soil productive, and his own life comfortable; and the other having nothing but muscular strength, a willing heart, and a desire to reclaim the wilderness. The question, then, came to be how these two men, the one with capital and the other with none, were to be brought to an equality in their acquisitions of profit from the soil? He knew no means except the simple process of robbery. But if they proceeded on that principle, the next new comer would just rob the two that had been before him; so that, by-and-by, the capital would disappear, and they would all be left in the lurch together.

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[1] He went to America in 1838 and returned in 1840. He had been much on the Continent since returning. See George Combe's Life by Charles Gibbon.

The conditions in which man is placed in the world.

"He would now proceed a step further, and they would see the bearing of this. It appeared to him, that the bountiful Creator had presented them with a soil capable of cultivation, with minerals below the ground and timber growing above it, and with a great number of elements which might all be converted into instruments for their enjoyment; and He had also given his creatures vigorous bodily powers to turn these gifts to account, as well as intellectual powers to bend the elements to their will. If man, then, would do his duty, he would find the practice of it agreeable; and the reward would be great and rich, and such as would bring satisfaction to his faculties. If this was a correct view of the state of this world, the only way by which working men could deliver themselves from the 'iron hoof of capital' was to qualify themselves to acquire capital for their own use; for it was capital that made capital. This brought him a little nearer the point. What was it that constituted the extraordinary differences that they saw between different classes of the community, in all the civilised countries of the world? He had, as he had already remarked, visited the United States of America; he had been for two years resident in Germany; he had travelled through Italy from Naples to the Alps; and he had seen a considerable part of France: and, in all these countries, the condition of the people was the same. They had rich and poor; men ill to do, and men well to do. But what was particularly striking was, that, although the United States of America presented all the elements necessary to human enjoyment, which most people conceived were wanting in this country, viz., universal suffrage, a fine climate, and an unbounded territory, not one-fourth peopled; still there also working classes complained of being crushed down by the 'iron hoof of capital,' and that they had nothing but a bare subsistence for their labour. Let them investigate the causes of this.

Education necessary to use these.

"He did not believe that God Almighty acted as a partial Father. He did equal justice to all, and the inequality lay in the differences which they themselves made. He ascribed the success of the middle classes in acquiring capital to the extraordinary amount of cultivation they bestowed on the minds of their children, which produced a mental capacity to deal with this world's causation, and to accumulate wealth. As the world is full of springs of activity, and everything proceeds from causation, it requires acute human observation to understand the causes, and to extract the benefits they are calculated to yield. He saw, then, one class of the community bestowing the utmost pains to drill the minds of their children, so as to enable them to cultivate the natural elements presented to them by Providence; while he saw, on the other hand, the labouring class, in a great many instances from necessity, but, to speak the plain truth, in not a few cases from sloth, stupidity, and recklessness, stinting their children of that education and preparation necessary to cope with the difficulties of this world. It was education alone, he contended, that would enable the working classes to raise themselves to that position of wealth, influence, and respectability which he had no doubt they were destined to occupy.

What constitutes Real Education.

"This being the case, the next question was, What constituted Education? Education had hitherto been supposed to consist in learning reading, writing, arithmetic, geography, and other similar branches; but these were the mere instruments or means by which the knowledge of the world was to be acquired. It appeared to him that education would never be adequate to man's wants until it aimed at teaching him the qualities of the natural elements which Providence presented to him; how he might deal with them so as to extract the greatest amount of benefit from them; and the relationship between them and his own constitution. This was what he called education. Hitherto, in most of the schools, reading and writing had constituted the chief education of children. But to learn to read was merely acquiring the means of ascertaining what books contained. The mere art of reading did not give us information, and would not unfold the powers of nature, unless we were taught them specially. Reading, however, was indispensable to enable us to search the records of human knowledge, and was therefore the first element of human education; but the extent of the knowledge it will convey will depend on the books read. The schools we have hitherto had have been confined too much to the acquiring of the means for gaining knowledge. It appeared to him that the first step in education was, to add a knowledge of the elements of nature; a knowledge of the causes which produce good and evil in this life, and which make us feel that we have acted wisely or unwisely.

"The school which it was proposed to establish was to be founded on these principles.

The instruction proposed in the new school.

"Mr Combe then gave an example of the method of instruction it was proposed to follow, in the case of a boy who was intended for the trade of a shoemaker; and showed the manner in which the principles of Political Economy, as affecting his trade, might be brought to bear upon his mind. He then, at some length, demonstrated the value and importance of introducing Physiology and Phrenology as branches of education. With such a course of instruction, the child would go forth from school, understanding what he was, and where he was, possessing a degree of intelligence that could otherwise be acquired only after many years' experience in the world.

The relation of the school to Religion;

"Mr Combe then remarked that it was to be a school for Secular instruction alone, and that they were to teach no Dogmatical Religion in it. He was gratified extremely by their approbation of this announcement. They would observe, from what he had said, that they meant to teach reverence for the Supreme Being. They meant to teach most sedulously the great, and important, and all-pervading principle that He made the world and made man, and adapted the one to the other; that He intended mankind to do their duty; and that nineteen-twentieths of their sufferings and sorrows arose from their own failures, in not acting in accordance with His laws. That was the kind of Religion which belonged to a Secular school. He conceived that every man had a right to judge for himself, in forming his opinions on religious subjects, however widely these might differ from his own. He did not profess himself to be a sectarian, like the Pharisee, who went into the temple to pray, and who thanked God that he was not like other men; but he professed himself on this subject to be like the Publican, who said, 'Lord, be merciful to me, a sinner.' It was every man's duty, to train up his children according to his own convictions of religious truth. The moment they yielded the right to every man to teach his own children, that very moment they surrendered the right to force their own religion on the consciences of their neighbours.

And to Sectarian Theology.

"They had suffered in this country, to an enormous extent, from the contentions of sects, in proof of which Mr Combe referred particularly to the state of Ireland. He passed a high eulogium on the National School system of that country, and expressed his satisfaction that, notwithstanding all the opposition which it had met with, it had continued to progress; so that, at the present moment, there were more children at the National Schools than had ever been at any former period.[1] As regarded the school which they were about to institute, they had come to the determination to leave the Saturdays and Sundays for the teaching of religion, by the pastors and parents of the children themselves. Such schools were common in the United States, in Holland, and also in Ireland; and last, and most important of all, several influential gentlemen in Lancashire, copying the American system, had brought a great scheme of Secular education before the public in that county, and intended to apply for a bill to authorise the community to tax itself for the support of these schools, which were to be under the management of those who paid the taxes.[2]

How the school was to be supported.

"The Edinburgh school would be opened in the Trades' Hall, Infirmary Street, and the fee would be fourpence per week, for each boy above six years of age, to whom it would be at first confined; but the founders were decidedly of opinion that if the experiment proved successful, the two sexes should afterwards be trained together. He begged to say that Mr Simpson and himself were not alone; and that the idea of the school had originated from Mr William Ellis of London, manager of the Indemnity Marine Insurance Company, who had practically tested the system in the metropolis, and who had placed at his disposal a sum of £100 to assist in the establishment of the school.[3] This amount had been supplemented by subscriptions from other parties; and it was worthy of remark, that some of these had come from Ireland.[4] He concluded by expressing a hope, that the school which they were about to institute would be the means of introducing an improved system of education into Scotland, of which she might one day be proud.

"Mr Simpson then shortly addressed the meeting. He said it gave him great pleasure and satisfaction, to hear the principles to which he had given utterance about fifteen years ago, in this city, so much better expounded and enforced that evening, by his friend Mr Combe.

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[1] See a history and account of the Irish system of Education, by George Combe, in Part Fifth, chap. iii.

[2] An account of the Lancashire movement, begun in 1847, is contained in this chapter, p. 237.

[3] Mr Ellis retired from that office in January 1877, but remains a Director of the company. He contributed liberally to the school during its existence.

[4] This refers to the establishment of a National System of Education in Ireland in 1831 and 1833, in which George Combe took very great interest, and of which he frequently wrote. See Part Fifth, chap. iii.

The new teacher introduced.

"Mr Combe said that Mr Ellis had not only most liberally contributed to the school, but he had also supplied them with a most able teacher, in the person of Mr W. Mattieu Williams, whom he had now the honour of introducing to the meeting.

"Mr Williams made a few remarks, in the course of which he stated that his design would be, not so much to communicate a knowledge of words, as to communicate a knowledge of ideas, to the boys that might be entrusted to his care. He bespoke their indulgence for a week or two after the commencement of the school, but, after that period, he hoped to have matters in such a state as would exhibit in a favourable light, to all who visited the school, the system of education which he intended to pursue."

The objects aimed at in the school.

The school was opened, for boys only, on the 4th of December, in temporary premises, No. 6 Infirmary Street. As was said in the first Report of the school, "it was instituted for the purpose of affording to the children of the working classes of Edinburgh a useful Secular education. It aimed at training children to virtue and usefulness, by instructing them in the constitution of the things and beings which exist, their relations, and the consequences of their various modes of action; and, by accustoming the animal propensities and moral and religious sentiments to act in harmony with the intellectual faculties, in obeying, throughout life, the law of God inscribed in the records of creation. The object of the school thus included the training of all the faculties—animal, moral, religious, and intellectual; but, in order to avoid the difficulties arising from differences of opinion among the various sects on points of religious doctrine, the department of Dogmatic Spiritual instruction was not undertaken, the teaching being confined to matters purely Secular, or relating to this world and its duties only." "The average attendance during the first month was 32; and the numbers continued steadily increasing until the last month of the session (July 1849), when they reached 60."[1]

The subjects taught have already been enumerated. Monitors were employed by the teacher, the number under each never exceeding twelve. "The lessons read were made subservient to the systematic

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[1] These quotations are from the Annual Reports of the school, additional extracts from which will be found in the Appendix, giving in fuller detail the working of the school.

The character of the teaching.

courses of instruction on the moral and physical sciences, natural history, geography, &c." "With the exception of the arithmetical tables, no lessons were set to the children to learn by rote." "Wherever the subject permitted, objects and diagrams were exhibited, and the teacher found that the rapidity, accuracy, and stability of the progress of the pupils, in any branch of knowledge, was almost measured by the number of such illustrations that had been presented to them." "Wherever inferences or theories were involved, they were submitted to severe examination—the teacher suggesting difficulties and apparent objections, and requiring the pupils to do the same.[1] In general, his object was to lead, rather than carry them through a subject, by supplying, or, if possible, drawing from themselves, such suggestions and facts as might draw their minds to investigate and find their own conclusions, rather than to remain mere passive and submissive recipients of the statements of the teacher."

Instruction in science given from the first.

"Object lessons were given daily to the younger children, so as to afford general and rudimentary ideas on various branches of knowledge, and on the meaning and application of the ordinary words and scientific terms which the sensible properties of the objects illustrate, in order to prepare the children for those systematic courses of instruction in the sciences, which constituted the chief business of the advanced classes. They were also made introductory to Physiological and Moral science." "Rudimentary ideas of their own mental faculties were afforded by leading them to inquire how they knew that an object was brown, or hard, &c.; and thus the organs and functions of the senses and perceptive faculties were made familiar to them, and the subject of Mental Philosophy and the relations of their faculties to the external world was opened, to be afterwards more fully unfolded in the advanced classes for Phrenology."

Knowledge of man's constitution and the social world imparted.

Physiology was taught, illustrated by a human skeleton, by casts of the muscular system, and by diagrams; and the structure, modes of action, laws of health, and uses and abuses of the bodily and mental organs explained. Social Economy was a regular branch of instruction, by which "the natural laws which govern the production of wealth, the manner in which it has been and may be distributed, and the foundation of differences of rank, of civil laws and government, and of the general duties and arrangements of social life, were taught." Physical training was also attended to, though the want of a proper playground interfered with this. "The introduction of

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[1] See remarks on this, the Socratic, method of questioning, in this chapter, p. 237.

Phrenology, because of the prejudices cherished against it, was considered by many as an experiment of questionable prudence, but experience proved its wisdom and great utility. Without instructing children in their own bodily and mental constitutions, it is impossible to convey to them clear, useful, and practical notions of their own relations to the other objects and beings of creation; and the children took a deep interest in this instruction."

Moral training specially attended to.

"Moral training was always maintained as the paramount object of the school." "The moral training was not confined to the mere teaching of the principles of morality; but every effort was made to exercise and develop the moral powers of the children, by maintaining them in active operation in all the proceedings of the school. Moral delinquencies were tried by a jury of the children, the teacher acting as judge." "The teachers endeavoured to give a moral tone to the whole proceedings of the school, by explaining to them the moral grounds upon which the school discipline was founded, and freely permitting *their own* conduct to be questioned—making the government of the school as constitutional as possible, and altogether based upon reason and the moral sentiments; always avoiding the position of irresponsible despotism, which is assumed by some schoolmasters, and viewed by many parents as essential to school discipline." At first, the teacher adopted the common method of corporal punishment, but was soon able to dispense with it altogether,—a very rare thing at that period, and still very rare.[1]

The early success of the school.

The first examination of the school was held four months after its opening, on the 4th of April 1849, before the parents and friends of the children and the promoters of the school, to report progress and explain the system of tuition pursued. According to the *Scotsman*, "the examination gave the greatest satisfaction to the numerous audience, and served to prove that the experiment had been eminently successful."

In September 1849, the school was re-opened for both boys and girls in more commodious premises, at No. 1 Surgeon Square, and a female teacher was engaged. By the middle of October, the pupils numbered 160, about a third of whom were girls. By-and-by, two pupil teachers were also employed.

The character and aim of the school, especially as excluding Theology, gave rise, of course, to much criticism and even strong opposition, the school being nicknamed "the infidel school," and the

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[1] See interesting details on this point, and on the general discipline of the school, in the Appendix, in the extracts from the Reports.

The criticism it received.

system denounced as "Godless." The name "Secular" was misunderstood and misrepresented. Even friends of "Secular" education objected to the name as applied to this school, on account (as a correspondent in the *Scotsman* of November 21, 1849, put it) of "a branch taught in it, which if it be not what Dr Muir or Dr Candlish, Bishop Terrot or Bishop Gillies would count religion, yet looks very like as if it partook of the religion of Bishop Combe and Dean Williams"—Phrenology! George Combe defended the use of the name as applied to the school, in a letter to the *Scotsman*, replying to this one.

The use of the name "Secular."

"The word 'Secular' is used as signifying things belonging to this world, in contradistinction to 'Spiritual,' or things belonging to a future life. All kinds of Secular knowledge cannot be taught in any common seminary, and hence the phrase 'Secular school' is used to indicate the fact, that Dogmatic Religious instruction is excluded, and that the things taught relate to this world; but not that Phrenology or any other particular branch of natural knowledge is necessarily inculcated in the institution. In regard to Mr Williams' school being properly named, I may observe that the question, whether Phrenology is a Secular or a Spiritual subject is easily settled. It is neither more nor less than the Physiology of the Brain. If, as your correspondent assumes, Phrenology is untrue, the uses of the particular parts of the brain are unknown; if it be true, these are known in so far as its truth extends. But, on either supposition, the subject is still the brain and its uses. Now, the brain is an object existing in this world, and its functions are performed in this life, and hence the doctrine of its uses is a Secular subject; and Mr Williams' seminary is therefore properly named a 'Secular school.'"

The relation of the school to Theology.

In one of the prospectuses of the school, it is explained that "the promoters and friends of the school by no means advocated the *exclusion* of the doctrinal portion of Religious education, but simply that it should be taught *separately*, either by the parents or in schools instituted for the purpose, under the superintendence of the clergy of each denomination." They also pointed out that, "in this respect, the school was in the same position as the High School and University of Edinburgh, and most of the public seminaries for the upper classes both in Edinburgh and throughout the United Kingdom, which were really 'Secular' schools, though the word 'Secular' was not formally appended to their titles."

After the school had been conducted for some years, George Combe bore the following testimony to the successful teaching of the elementary principles of science to young children.

The success of its special features.

"It has been found practicable to teach the elements of the Natural Sciences to the children, without straining their faculties, or having recourse to emulation, rewards, or punishments to stimulate them to exertion. The adaptation of this knowledge to the human faculties has rendered the communication of it to the mind, as acceptable as the supply of food to the body. The lessons on science have been followed with eagerness by the pupils, recommended solely by the inherent interest of the subjects and their applications to the promotion of human welfare. The influence of this instruction in wakening up an observing, reflecting, and self-controlling habit of mind, is one of its leading characteristics. The children learn that they exist in the midst of ever-active forces, physical and moral, with which determinate consequences have been connected by the Author of Nature; and they have been enabled to discern that a large extent of human suffering arises from ignorance of the agency of these forces, or from reckless or wilful encounters with them; and also that the improvement in their own condition, attainable by steady compliance with the natural conditions of happiness, is so great, that it is calculated to afford them every encouragement to acquire the knowledge, and submit to the self-restraint, which are indispensable to that compliance. In the lessons on Social Economy, Physiology, and Phrenology, these conditions are systematically taught. The promoters have, from the first establishment of the school, advocated the great practical importance of teaching Physiology, and its applications to Health, to the children of the working classes; and experience has shown that the young receive such instruction with intelligence and avidity."[1]

Its general efficiency.

The school existed for six years, till 1854. Yearly examinations were held, and fully reported in the *Scotsman*.[2] Reports were also published every year, written by Mr Williams, and six in all thus appeared. These are admirable, being full of excellent educational matter, and would well repay republication entire.[3] In the Appendix will be found certain extracts bearing on special features of the school and the mode of its working, interesting and valuable in themselves, and as showing the practical application of George Combe's principles. The promoters of the school and the *Scotsman* reported every year in the most favourable terms of its increasing efficiency; and there is no doubt that, while it lasted, the school was most successful. The average attendance was over 150. The school was frequently visited by many persons interested in education, and by teachers who wished to become acquainted with the system. It was supported entirely by the subscriptions of friends and the fees of the children. Application was made to the Privy Council, in 1854, to participate in Government grants, like other schools; but this was refused, on account of "Religious" instruction not being given.

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[1] From the Fourth Annual Report of the School, in 1853.

[2] Some of these were held in the Waterloo Rooms, Edinburgh, to allow larger numbers to witness the work of the school, and roused great interest.

[3] They may be seen in a volume in the Phrenological Museum, and in the Advocates' Library, Edinburgh.

Reasons for its being given up.

Mr Simpson's death in September 1853, Mr Combe's infirm health, Mr Williams' removal to Birmingham,[1] and the difficulty of obtaining a proper teacher, rendered it advisable to give up the school at the close of the session in 1854, when "the annual examination took place, and gave high satisfaction to the parents of the children and a large number of visitors." George Combe, to the end of his life, cherished the idea of re-opening the school, but never succeeded in finding a suitable teacher.[2]

2. THE SECULAR SCHOOLS IN LEITH.

A Secular School established in Leith.

In 1852, four years after the opening of the Williams school, steps were taken to found a school in Leith on the same principles as the Edinburgh school, and for the teaching of the same subjects. Mr Williams writes that "the school was first suggested by a working man whose son had died from the effects of a brutal flogging at one of the common schools." A circular was issued in November, declaring that "a portion of the working classes of Leith, desirous of establishing a school upon more useful principles than those at present in existence, held a meeting and appointed a committee to carry into operation the above object. It is proposed, therefore, to frame it on the model of Williams' Secular School in Edinburgh, which has proved so eminently successful. In the system of teaching, care shall be taken, not so much to cram the memory, as to communicate and elicit ideas from surrounding objects, thus giving the education a practical tendency, which must prove highly useful to the pupils in after life." It is added that "the system has given the highest satisfaction to all who have taken an interest in it," and they announce that the school will be called the "Leith Secular School."

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[1] Mr Williams became Lecturer on Chemistry and Experimental Physics at the Birmingham and Midland Institute, Birmingham.

[2] Additional details regarding the school will be found in the "Life of George Combe," by Charles Gibbon, vol. ii. pp. 247, *et seq.* and 362.

Its history and success.

George Combe and Mr Simpson, whose help was solicited, took an active part in founding and organizing the school, and Mr Williams gave a course of lectures to add to the funds. Mr James Hay[1] of Leith granted a schoolroom free of rent, in the premises of the Edinburgh Roperie Company, in Bath Street; and he and others assisted the committee of working men "with subscriptions in aid of large contributions made by themselves for the purchase of the necessary furniture, books, and apparatus." They engaged as head teacher Mr William Ellis, who had studied for some months under Mr Williams, and, as assistant, James Lambert, one of Mr Williams' pupil teachers, in addition to a young woman who taught the girls sewing. The school was opened on the 7th of March 1853, and, before the end of the month, had 140 pupils in attendance, and could receive no more, as the schoolroom was inconveniently crowded. It was managed by a committee chiefly of working men, and, under their auspices, was successfully conducted for five years.

It becomes "Hay's Mechanics' School."

In 1858 Mr Hay adopted the school as his own, with Mr Ellis as head-master, bearing all charges to the last. He intended it primarily for his own workers, though others were allowed to attend. On account, no doubt, of the misunderstanding of the name, the school was then called "Hay's Mechanics' School." Notwithstanding much opposition, as Mr Hay says, "with the assistance of good and efficient masters, the school turned out a great success." It was frequently visited by George Combe and other friends of broader education, all of whom continued to be interested in its success. It was examined yearly, and obtained very favourable reports. It was carried on till some five years ago, when the Scotch Education Act passed in 1872, by which many of the points contended for by the promoters of these schools were secured for National education. The schoolroom is now used as a reading-room for the workers in the Roperie. It has been impossible to obtain further details regarding the working and history of these schools, on account of the destruction by fire of all the relative papers.

3. THE SECULAR ASSOCIATIONS AND SCHOOLS IN GLASGOW.

The educational writings and efforts of George Combe, especially his pamphlet, "What should Secular Education Embrace?" published

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[1] Mr Hay has long been the senior partner in the Roperie Company, and an influential citizen of Leith. He was very intimate with the Combes. He still lives in Leith (1878).

Efforts for Secular Education in Glasgow.

in 1848, originated a most active and long-continued movement on the "Secular" platform in Glasgow. The chief co-operators in this endeavour were Mr James M'Clelland,[1] Mr Richard S. Cunliff,[2] and Dr J. P. Nichol,[3] professor of Astronomy in Glasgow University, besides other advanced educationists.

(1.) *The Secular Sunday-schools.*

The "Sunday Educational Association."

The first public effort made was the formation of the "Glasgow Sunday Educational Association," in 1849, though the work begun in 1848. Its object was to establish Sunday-schools, in which should be imparted "the ordinary elements of instruction, such as reading, writing, arithmetic, and geography, to destitute and neglected orphans, to children whose parents are unable to pay for their education, or are indifferent to whether they receive any, to such as are sent early to work, and who, from exhaustion of body, if taught *at all* must, be taught on Sunday,—in short, to the poorest, the most ignorant, the most helpless class of children; to place within their reach the means of knowledge, to train them up to habits of cleanliness and sobriety, and to instil into their minds such precepts of morality as are calculated to make them honest and virtuous." The Association earnestly deprecated any idea of rivalry with any other society or Sunday-school: "they wished to introduce a new kind of Sunday-schools, altogether for those who must either be educated in the way contemplated, or not at all."

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[1] Mr M'Clelland was long a very intimate friend and correspondent of George Combe's, and a most enlightened and indefatigable educationist, proving his interest in education by the ungrudging labours of a lifetime, and by large expenditure for its furtherance. He was chairman of both the Glasgow Secular School Societies during their whole existence, and one of the most earnest promoters of the Secular School movement. He has also been a very active member and regular attender of the Social Science Association since its foundation in 1857, especially in the Education Department, the chair of which he occupied, during most of the time, at the last meeting in Aberdeen, 1857. Mr M'Clelland now lives chiefly at Pembridge Square, Bayswater, London, to which he removed some years ago.

[2] Now President of Anderson's College, Glasgow, a true and earnest educationist, having the courage of his convictions in an unpopular cause.

[3] Professor Nichol is well known as the distinguished and eloquent author of "The Architectu[illegible] Heavens," and other popular scientific works. He was one of the [illegible] most enlightened of our Scotch educationists, lecturing, writing[illegible]ising regarding education with unremitting energy. In 1847 [illegible] the "Education of the People," by J. Willm of Strasburg, a p[illegible] on the means of extending its sphere and improving its ch[illegible]lished in 1843), with an admirable Introduction on educatio[illegible]ator. He wrote also numerous lectures and pamphlets on the[illegible]

The origin of the idea.

The idea of such a Sunday-school was first started in 1848, by a few earnest young men,[1] in "an upper room" in Glasgow, in which at first they disinterestedly laboured. They afterwards opened a school in St Andrew Square, in which they taught, till ejected from the premises by the opponents of such a novel, unsectarian idea. They, however, succeeded in obtaining other premises in the same Square, and persevered in their good work. The opposition they encountered finally led them to solicit the assistance of like-minded men, willing and able to support them, and the result was the formation of the above Association, in 1849, which paid the past and bore all future expenses.

The Sunday-school established.

The Association succeeded ultimately in establishing four schools in different neglected parts of the city, with an average attendance at each of from 100 to 150, taught free by a large number of enthusiastic teachers. These schools did a great amount of good among the lower portions of society, and the yearly reports are most interesting and instructive. The Association continued its admirable labours for four years. The teachers published, in 1852, a very good collection of "Moral and Social Songs for the use of Secular Schools,"[2] the first of its kind, and deserving republication. Their work encountered the greatest opposition, evinced by ejection from the premises and misrepresentation of their opinions and objects.

(2.) *The St Andrew Square Secular School.*

The "Secular School Society."

Another association was formed in 1850, with Mr M'Clelland as president and Mr Cunliff as vice-president, for conducting Day schools on the same principles as those of George Combe and his friends, called the "Glasgow Secular School Society."

The first Secular School.

In the premises in St Andrew Square, they opened the first Day Secular School, in October 1850, under Mr Robert Brown, afterwards resident surgeon in Barnhill Poorhouse. In 1851, he was succeeded by the two brothers, William and Thomas Bennett, who conducted the school under the auspices of the Society till August 1853, when a proposal to remove to other premises caused a separation between them and the Society. The Bennetts successfully conducted the St Andrew Square School, till December 1856, with the co-operation of another committee of friends interested in their work, though their relations with the first committee continued, to the last, to be quite cordial.

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[1] Of these there survive the Rev. William Bennett, now minister of the Unitarian Church, Paisley; Mr Thomas Bennett, now editor of the *Dumbarton Herald*, author of "A Plea for Secular Education" (Trübner & Co.), in which the position of the party is fully and ably put, and a picturesque account given of the above schools; and Mr John Neilson, builder, Glasgow.

[2] Published by the late John Robertson, 21 Maxwell Street, Glasgow.

The subjects and character of the teaching.

The school embodied the same general features as the Edinburgh and other Secular schools. It consisted of three divisions, the lowest being under a female teacher, the higher under the two brothers. The curriculum included a thorough course of English commercial education; object lessons, in the lower divisions, as a simple and gradual "introduction to the sciences;" Physiology and Social Economy, which received special attention as so directly related to human well-being; Phrenology and the "Natural Laws," which were begun under Mr Brown, the first teacher; Geology and other sciences, to extend their knowledge and to cultivate a taste for scientific studies; singing, sewing, &c. The pupils were allowed an interval of five minutes at the end of every hour, a practice which should be universal for the sake of its physical, and moral and intellectual invigoration. On Saturdays, they were taken out into the country, and to museums, manufactories, &c., for various educational ends. Moral education received prominent attention, through regular instruction in morals and manners, by means of lessons on their duties to their parents, to their neighbours, and on truthfulness, honesty, kindness, &c., and by careful training at all times and by all subjects. The school was attended by the children of parents of all churches and sects, and of different social grades, and it had an average attendance of 150, as many as the rooms could accommodate. During its existence it was remarkably successful.[1]

(3.) *The Carlton Place Secular School.*

The second Secular School.

In 1853, the Glasgow Secular School Society opened another school in Carlton Place, under the able management of Mr John Mayer, and Mr James N. M'Lean who had been trained in the St Andrew Square School, Mr Mayer having latterly sole charge, with assistants male and female. The average attendance in this school was from 100 to 200 pupils of both sexes, and its success was marked, notwithstanding the antagonism displayed towards it in many powerful quart[illegible] was supported entirely by the voluntary contributions of a [illegible] friends,[2] and the small fees of the children, the annual expenditure being about £120. An effort, made in 1853, to participate in Government grants was unsuccessful.

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[1] Further interesti[illegible] gard to its working and the effects of its training are given in [illegible] Plea." Annual Reports were also published.

[2] Mr M'Clelland [illegible] ore the chief part of the expense.

The subjects taught.

The subjects taught were almost identical with those of the Williams School, all theological instruction being excluded, and scientific subjects forming a prominent part of the work—including Physiology and Social Science from the first, and, ultimately, systematic Chemistry, for which good grants were obtained from the Science and Art Department. The school was carried on for twenty years, until the passing of the Scotch Education Act in 1872, when the promoters thought that most of what they had so long contended for had been gained and was embodied in the Scotch Code.

The success of its special features.

Interesting and valuable reports were issued yearly; and a history of the school, after thirteen years of successful teaching, was read by the Head-master, Mr Mayer, at the meeting of the Social Science Association in Manchester, in 1866.[1] In a note to this paper, Mr Mayer says that the school "is silently exerting no mean amount of influence by its example; and its success most indisputably establishes the fact, frequently denied, namely, that a really Secular system of education can exist which is thoroughly and practically religious." The school would seem to have been most efficient. In an excellent pamphlet on "The Results of an Inquiry into the State of Schools and Education in Glasgow," by Robert Somers, published in 1857 (R. Griffin & Co., London and Glasgow), which originally appeared as a series of papers in the *North British Daily Mail* of that year, it is specially reported on in the highest terms, and its peculiar features mentioned. "Prominence is given to Physiology, Social Economy, Mechanics, and other Sciences." After describing lessons witnessed on Physiology and Political Economy, and praising the manner of teaching, the author concludes: "Such completeness of arrangement and such extension and breadth of study as are apparent in these and other instances are rather an exception, of course, than the rule in the common schools of Glasgow."

(4.) *Other Efforts in favour of National Unsectarian Education.*

Efforts for Unsectarian Education.

The Society was very active in other directions, in advocating National Unsectarian education, conducted on a broader basis of instruction and training. An influential private meeting was held in 1850 for advocating these views, and a petition was shortly afterwards drawn up, signed by 1300 persons, and presented to Parliament by Lord Melgund, in April 1850. A meeting of delegates from workshops and factories took place in February 1851, at which the programme of the Secular School Society of Glasgow and the National Public School Association of Manchester was adopted, and arrangements made for a public meeting of the working classes. This took place in April, in the City Hall, George Combe[1] and James Simpson being the chief speakers, when a motion embodying the same views was unanimously carried.

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[1] Published in the Transactions of the Association for that year.

"The Glasgow Public School Association."

Another association was also formed to promote these objects, called the "Glasgow Public School Association," which addressed an able "Memorial on behalf of a National System of Education," on the "Secular" platform, to Earl Granville, then President of the Council, in February 1854. It was signed by five of the chief promoters of the Secular school, John Tennant of St Rollox being president, Professor Nichol, vice-president, James M'Clelland, convener, R. S. Cunliff, treasurer, and George Smith, secretary. This was a remarkably well-written document, putting the aims of the "Secular" education party very clearly and fully.[2]

In all these movements in the West of Scotland, George Combe took the greatest interest and played an active part, especially through his friend Mr M'Clelland, by whom he was kept in full knowledge of all that was being done.

4. THE NATIONAL HALL SCHOOL OF WILLIAM LOVETT.

Lovett's efforts in favour of National Education.

One of the most interesting educational efforts ever made in this country was that of the remarkable man, William Lovett, the Chartist. Opposed altogether to the physical force party in Chartism of Fergus O'Connor and his friends, Lovett represented the moral force Chartists, who, while seeking political privileges for the people, endeavoured to render them worthy of possessing them, by raising them physically, mentally, and morally by means of education. In 1837, he issued an eloquent and powerful Address to the Working Classes on the subject, in which he advocated the appointment by Parliament of a Committee of Public Instruction, and the establishment, all over the country, of normal, infant, preparatory, high, and finishing schools or colleges, with evening schools for later education. After his release from Warwick Jail in 1840, where he had been imprisoned for the prominent part he took in regard to "the People's Charter," he issued a similar Address on Education "to the Reformers of the United Kingdom." In this document, in addition to the foregoing educational machinery, he recommended the foundation of "Public Halls or Schools for the People," in all parts of the country, to be used for schools, lectures, discussions, and entertainments, with play and pleasure grounds, baths, museums, laboratories, and workshops, as well as agricultural and industrial schools; and the offering of premiums for essays on education. He also showed how, in a short time, all this could be achieved by the people themselves, by each man contributing only one shilling a quarter.

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[1] His speech there is incorporated, in great part, elsewhere in this volume.

[2] It was almost entirely written by Professor Nichol.

The reception these met.

"This proposal," says Lovett, in a letter to George Combe, in October 1848,[1] "while it was warmly greeted by the press, and received the commendations of intelligent men among all parties, was met with falsehood, intolerance, and bitterest rancour, by the most prominent organ of Chartism, the *Northern Star*. Its proprietor and editor jointly denounced it as a plan intended to destroy Fergus O'Connor's political supremacy, and subvert one which he had previously concocted. Education was ridiculed, knowledge was sneered at, facts perverted, truth suppressed, and the lowest passions and prejudices of the multitude were appealed to, to obtain a clamorous verdict against us.

The foundation of the "National Hall."

"In this state of political feeling, it was deemed desirable to try what good could be locally effected. A large chapel being to be let about that period, we took it on a lease of 21 years; and receiving subscriptions from some liberal friends, we were enabled to fit it up as a hall. It was opened in July 1842, under the title of the National Hall[2]; since which period it has been occupied as a lecture and concert room, and place of meeting. It may be necessary to state, that two of our fundamental rules are opposed to the introduction of intoxicating drinks, and to its being used for purposes of controversial theology. A Sunday-school, on a small scale, was established soon after its

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[1] George Combe sent Lovett the prospectus of the Secular School in Edinburgh about to be opened, asking information regarding Lovett's own schools. This Lovett gave in a long and excellent letter, dated October 22, 1848, which is too long to quote in full, but of which the above is an extract.

[2] The name, "National Hall," was given to the school in connection with the proposal in Lovett's address of 1840, referred to above. This one in Holborn was intended to be the first of the kind, to show the sort of institution recommended, and the manner of working it. It was capable of accommodating 2000 persons, and, besides the school, was devoted to public meetings, lectures, concerts, and classes of different kinds, and had a coffee-room and library.

Schools opened in connection with it.

opening[1]; but owing to the great expense incurred in the fitting up of the Hall, and a consequent debt of about £300, we were unable, till recently, to establish what we all desired, a Day School for children. A kind friend, however, came to our aid, one whose heart warmly sympathises with the millions, and whose head is ever active in promoting plans for their welfare. He generously offered us assistance in establishing a Day School for Boys, under my superintendence, which offer was gratefully accepted. The school was accordingly fitted up, desks provided, a master engaged, and the school opened in February last. We opened with nearly 100 pupils, and now we have a daily attendance of about 200. Their ages are from six to fourteen, perhaps the majority being from eight to eleven. It is opened to the public generally, and we have the children of Jews, Unitarians, and Christians of various sects, as well as those of no sect at all,—no questions being asked, nor opinions taught, calculated to give offence to any. But our objects, terms, and course of instruction, may be best gleaned from our prospectus. It states that,—'In directing public attention to this school, the conductors are hopeful of receiving encouragement and support from *all classes*, and more especially *from the friends of education*, as their chief object in forming it is to provide for the children of the Middle and Working Classes a sound, secular, useful, and moral education,—such as is best calculated to prepare them for the practical business of life, to cause them to understand and perform their duties as members of society, and to enable them to diffuse the greatest amount of happiness among their fellow-men.'"

The objects of the Day School

Its relations to Religion.

"You will perceive," he continues, "that our school is purely Secular: not that we undervalue Religious instruction; but as the attempt to introduce any particular form or creed, or religious teaching, would naturally call forth distrust among those parents whose feelings were opposed, or whose own peculiar views were rejected, we deem it wise to exclude from education all such questions of dispute. If the great precept of 'Love one another,' be made the basis of educational discipline, and if the moral and intellectual virtues be developed in the minds of the children, we think parents will perceive, that more genuine Christian charity is likely to result, than if they were drilled n the constant reading of what they could scarcely comprehend, r by repeating precepts by rote, without their importance being xemplified by practice. We think that, when abundant time can be ound for imparting Religious instruction beyond that dedicated to he school, and when so many religious instructors of all denominations are willing to impart their peculiar views, it would seem more in accordance with the teachings of Christ to remove all sources of contention, and endeavour to *dwell in peace and union*, which are the great essentials of religion, than, by our selfish desires and sectarian jealousies, suffer ignorance, vice, and disunion to prevail."

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[1] The Sunday-school was similar to the one carried on in Glasgow, already described. "Free admission," says Lovett, "was given to all who came cleanly in clothing and person; the education given being reading, writing, arithmetic, grammar, and geography, with such other kinds of information as was in our power to bestow." It existed four years, and was taught by Lovett and some of his friends.

The subjects taught in it.

The school was opened at first for boys; but soon after for girls, under a male and a female teacher. The subjects taught were almost the same as those afterwards taught in the Edinburgh and Glasgow Secular schools, including, of course, Physiology and Social Science, with the facts of trades and manufactures, and Natural History and other sciences, Drawing, and Vocal Music. In the school, Lovett himself taught Physiology, being the first to teach this subject in any common school in Britain; Social Science was taught in it by William Ellis, who was the first to teach the subject in schools. Lovett gives a graphic account[1] of his efforts first to master Physiology himself, and thereafter to render it simple enough for children. By help of a set of diagrams, prepared by himself, "having formed a class of boys and another of girls," he tells us, "I commenced my teaching, and was gratified, as I proceeded, to find that even the youngest in the class took an interest in the lessons, and very readily mastered the rather difficult names of the bones, muscles, &c. When I had taken my young ones through their first course, I was greatly encouraged to persevere in my work by Mr George Combe of Edinburgh, who, on hearing me give a lesson to my class of girls, was pleased to make some very complimentary observations respecting their knowledge of the subject." Of this visit, George Combe gives the following account, in a letter to the *Scotsman* of 17th November, 1849:—

Its work described by George Combe.

"'The National Hall School,' No. 242 Holborn, owes its origin to Mr William Lovett, the celebrated Chartist, and other individuals. Its object is to give a useful Secular education to the children of the working classes, leaving Religion to be taught by the parents and

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[1] In his autobiography, called "The Life and Struggles of William Lovett, in his pursuit of Bread, Knowledge, and Freedom" (Trübner & Co.), published in 1876, a remarkable and inspiring book, full of noble thought and noble action.

Its work described by George Combe.

pastors of the children. It was opened on the 28th February 1848, and, at the time of my visit, was attended by 180 boys and 70 girls, under the charge of Mr John Harris and Miss E. Sunter. In this school, reading, writing, arithmetic, algebra, mechanics, and the several branches of science are taught. I heard, for example, Mr William Ellis give a lesson on Social Economy to a numerous class of boys and girls.

"This was only one of a series of such lessons, and the readiness, clearness, and pertinency with which the children answered questions, showed that their knowledge was lodged, not in their memories merely, but in their understandings.

"I heard also Mr Lovett give a lesson with admirable precision to a class of girls on Anatomy and Physiology. They were taught, by the aid of large, well executed drawings, the structure of the human body, and they showed a ready knowledge of the bones, the superficial muscles, and the circulating, respiratory, and digestive organs, with their uses. When these girls become wives and mothers, we may hope that this instruction will enable them better than sheer ignorance of such subjects would do, to understand and obey the laws of health, on which their own lives and those of their children will greatly depend.

Lovett's position and labours.

"It is pleasing to observe Mr Lovett's present position and occupation. He continues to be as sincere a Chartist as ever (and he *suffered* for his opinions), but he has generally differed from the bulk of the Chartists regarding the best mode of securing the legal enactment of the People's Charter; and also regarding the necessity of their making active exertions to prepare themselves and their brethren for the proper exercise of the franchise, when they shall obtain it. He has the superintendence of the Hall and schools, and devotes the chief portion of his time to these objects, sometimes teaching, sometimes making school apparatus, and generally attending to whatever is taking place in the Hall. He is an amateur in teaching Physiology, but he executes his task well.

"This is the true method of promoting the extension of the political franchise to the working classes. If a generation taught and trained in schools like these were fairly come to maturity, they might be safely trusted with political power."

He teaches Physiology in the Birkbeck Schools.

Shortly after this, at the suggestion of Mr Ellis and three of the masters of the Birkbeck Schools, Lovett taught elementary Anatomy and Physiology in these schools, and thus was the means of introducing these subjects there, where they have formed a special feature ever since. He also opened a class, at the National Hall, for instructing the teachers and assistants of these schools in these subjects, in order to qualify them to teach them themselves. In 1851, he published the first text-book for schools written on these subjects, called "Elementary Anatomy and Physiology for Schools and Private Instruction," which then received high praise from various journals, including the *Lancet*.

He conducts his own school himself.

In the same year, after his second teacher left, being unable to obtain another, he undertook the teaching of the school himself, with the help of an assistant. He conducted it with the greatest enthusiasm and success for six years, notwithstanding much annoyance and increasingly weak health, till the premises were taken from him in 1857, and the school was dispersed. After trying, in vain, for four years, to secure another place, he had finally to abandon the work so dear to him, and to sell the furniture.

His after educational labours.

After giving up the National Hall School, Lovett continued to teach Anatomy and Physiology and other subjects in the Birkbeck and other schools in London, for many years. He framed also text-books for schools—one on "Social and Political Morality," which was greatly appreciated when it appeared; others on Astronomy, Zoology, and Geology, for none of which publishers could be got; and "The A B C of Social Science in twenty lessons, addressed to the Working Classes, by a Working Man," which appeared in weekly lessons in the *Beehive*, edited by George Potter.

The spirit and practice of William Lovett's admirable labours for education are well expressed in the following appeal to his "working-class brethren"[1]:—

The nature of his educationa views.

"Again, I would beseech you to secure a proper education for your children. The education you should aim at is not merely the old routine of reading, writing, and arithmetic, or such mere technical knowledge as shall enable your children to become more efficient tools of production; but such as shall serve to prepare them to stand on a footing of equality with others; and possessed of such knowledge and such moral training as shall fit them for a life of industry and usefulness, so as to be a blessing to themselves and their country. To this end, they must not only be able to read and write and cipher, but to acquire some knowledge of their own nature; of the world they inhabit; of the existences they are surrounded by; a knowiedge of the conditions of social and political life, and rules of conduct on which their well-being chiefly depends; together with the outlines and rudiments of science, which form the foundation of those arts and manufactures that contribute to the prosperity and happiness of our country. In the pursuit of those attainments, there should be little difference made between boys and girls, seeing that women are destined to have the first and chief hand in moulding the minds and characters of our people; excepting that girls should be taught at school to make and mend their own clothing and to cook their own food—qualifications of the first importance to promote the well-being of a family." It is remarkable what a unity of aim and practice pervades all these pioneers of broader education.

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[1] See his Autobiography, p. 425, *et seq.*

Lovett a pioneer of broader education.

William Lovett has the rare merit of being one of the first to perceive the defects of our education, and to suggest and to help practically to work out the only remedy, in the broader, truer, and more real education advocated by him and his co-workers in the same field. The year 1848, so memorable for the great French Revolution, saw also the foundation of the schools of Lovett, Ellis, and Combe. Of these, Lovett's has the priority in time, if not in intention, the National Hall School being opened on the 28th of February, the first Birkbeck School on the 17th of July, and the Williams School on the 4th of December.

This remarkable man, little known and less understood, but one of whom the country ought to be proud, died in 1877, in the seventy-seventh year of his age, encouraged and tended to the last by his noble-hearted wife.

5. THE BIRKBECK SCHOOLS IN LONDON.

William Ellis's early study of Social Science.

Mr William Ellis, the founder of these schools, being the son of a merchant, a merchant himself in early life, and manager of the Indemnity Marine Assurance Company, to which he was appointed at the early age of twenty-eight, and having daily experience in commercial affairs, had his attention early directed to the subjects of wages, panics, strikes, currency, banking, and similar problems of commercial and social life. Endowed with a spirit of philosophical inquiry, he early began the earnest study of their causes, and of the principles of Social and Political Science, being further incited to these inquiries by association with Thomas Tooke, James Mill, and their highly intellectual circle. After so far mastering the subject, he felt, like others, that no good would be done to the labouring classes, whose evils he wished to alleviate, unless the universal ignorance on the principles at the basis of all commercial and social phenomena were removed, by having the principles taught to them simply and clearly; in short, these hitherto abstruse and inaccessible truths must be popularised. Like a true educator, he saw that the right field to labour in was the school, where the child was being instructed and trained. He therefore began, in 1846, to give simple lessons on the subject in the British School in Cole Harbour Lane, Camberwell, in his own neighbourhood, taught by a superior man, Mr Holmes, who afterwards also assisted Mr Lovett in his efforts in favour of Physiology, and employed him in his own school.[1] Mr Ellis was more than surprised at his success, and at the ease with which the subject was understood and appreciated by children; and, from that time till now, he has devoted himself to teaching and writing on Social Science, for schools and for popular study and practice. He next gave lessons, as already told, in Lovett's school, in 1848, and soon after published his first text book on the subject, "Progressive Lessons in Social Science."

He begins to teach it in schools.

In 1848, an effort was made to establish a school in connection with the London Mechanics' Institution, the second institution of the kind in Britain, founded by Dr Birkbeck, in 1824, and presided over by him till his death in 1841; the Glasgow Mechanics' Institution, established in 1823, mainly through Dr Birkbeck's influence, being the first. An active mover in this matter was Mr Williams, afterwards of the Secular School in Edinburgh, who was then Hon. Secretary of the School Committee. Mr Ellis entered into the movement, and, chiefly by his liberality and assistance, a school was founded in the premises of the Institution, in Southampton Buildings, Chancery Lane, Holborn, which was designated the Birkbeck School,[1] in honour of the distinguished founder of Mechanics' Institutions, and which was the first of the name. It was opened for boys, on the 17th of July 1848, under the able superintendence of Mr John Rüntz, whose brother, Mr James Rüntz, is Head-master of the Kingsland Birkbeck School.[2]

The first Birkbeck School founded.

The original prospectus of the school was of the same high type as those already quoted, and the course of study was similar. In addition to the usual branches, and the elements of mathe-

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[1] As George Combe says in his letter to the *Scotsman*, of November 17, 1849, "To Mr Holmes' enlightened liberality in allowing this experiment to be tried, no small portion of the subsequent success of the plan is to be ascribed." Mr Holmes died some time ago.

[2] Mr John Rüntz had the honour of proposing the name of these schools, and was also superintendent of them for many years. Most of the head-masters of the Birkbeck Schools received their special training from him, at the central schools, Southampton Buildings, Holborn.

The Education given there.

matics, mechanics, and the physical sciences, "the children were to be made acquainted with the laws of their own organisation, in order that they might understand how much their health, general energy, physical happiness, and length of life are dependent on their own conduct; also with the laws of Social Economy, that they might properly understand their own position in society, and their duties towards it. The system of education adopted is that which modern science and experience have shown to be most in accordance with the constitution of the human mind, and best calculated to strengthen, develop, and rightly direct all its faculties, by presenting to them the objects naturally adapted to call them into varied and healthy activity. The moral training is based on the principle that the moral feelings, like the physical and intellectual powers, can only be strengthened by actual exercise; that the mere teaching of moral precepts is not sufficient, since they are but intellectual truths for the guidance of the feelings, and their acquisition an intellectual operation—they must be carried into practice." The school was "purely Secular."

George Combe visits the school.

George Combe visited the school shortly after its opening, and wrote the following account of it, in the letter to the *Scotsman* of 17th November 1849, already quoted:—"I next visited the Birkbeck School, connected with the Mechanics' Institution, Southampton Buildings. Its constitution and objects are similar to those of the National Hall School, and its success has been highly encouraging. It was opened on the 17th of July 1848, and, on the day on which I entered it, there were 280 boys in attendance. It is very ably conducted by Mr J. Rüntz, and several assistant teachers and monitors. Here also I heard Mr Ellis give a highly interesting lesson on Social Economy to a class of boys; and, on another occasion, I heard one of the monitors, Thomas Selby, a boy of twelve years of age, give a lesson on the same subject, to a large class of his school-fellows, in a style of distinct efficiency which surprised me, much as I had anticipated from what I saw of Mr Ellis's teaching. The conclusion which I drew was, that the great principles of Social Economy are so directly referrible to facts with which even children of twelve and fourteen years of age are conversant, that they may be taught to individuals of that age with both pleasure and advantage, provided the teacher himself thoroughly comprehend them, and be capable of furnishing ready and familiar illustrations.

"The limits of this communication forbid me from entering into details concerning the other branches taught and the mode of teaching in these schools; suffice it to say that the subjects are practically useful, and the teaching is of a high order, displaying energy of mind and extensive knowledge in every department. The best evidence that can be adduced in support of this statement is the success which has attended these seminaries, and their multiplication in the metropolis."

This school was carried on for twenty-five years, till it was given up in 1873, and, during the greater part of this time, it was used as a kind of training school for the teachers of similar schools.

The earlier Birkbeck Schools, now discontinued.

After the foundation of the first Birkbeck School, Mr Ellis set himself to found other schools on the same principles, which though established solely by his own munificent liberality, he called Birkbeck Schools, magnanimously subordinating himself in all these endeavours. George Combe tells us that, at the time of his visit, there had been founded, in less than a year after the first, the following schools:—

"(1.) A school in John Street, Tottenham Court Road, having a daily attendance of 118 boys. It was opened on the 23d of September 1848, and is conducted by Mr Alfred Brooks, who, for a short time, was an assistant in the National Hall School.

"(2.) The Finsbury Birkbeck School, situated near the Tabernacle Chapel, City Road. It was opened on the 16th of August 1849, and is conducted by Mr Thomas Cave, formerly an assistant in the National Hall School, and for a short time at the Birkbeck School.

"(3.) Another branch of the Birkbeck School was opened on the 1st of October curt., in the Lower Road, Islington, by Mr Wells, a young man who was brought up in Mr Holmes's school, at Camberwell, and who has been an assistant in the Holborn School from its commencement."

Another was subsequently founded at Vincent Square, Westminster, also for boys.

The Birkbeck Schools now existing.

All the foregoing schools have since been discontinued, either having been given up, or having their places supplied by the other schools since opened.

There now exist (1878) the following Birkbeck Schools, in or near London, all founded and maintained by Mr Ellis:—

(1.) *The Cambridge Road Birkbeck Schools*, in Cambridge Road, Bethnal Green, founded in January 1851, for boys; head-master, Mr Robert W. Pike; with 140 boys and 80 girls now on the registers.

(2.) *The Peckham Birkbeck Schools*, in Willow Brook Road, near Hill Street, Peckham, founded in 1852, for boys, girls, and infants; head-master, till recently, Mr W. A. Shields,[1] now Mr George Bond; with an average attendance of some 400.

(3.) *The Kingsland Birkbeck Schools*, in Robinson's Row, Kingsland, founded in 1852, for boys, girls, and infants: superintendent, Mr John Rüntz; head-master, Mr James Rüntz; with 340 boys, 152 girls, and 70 infants on the registers.

(4.) *The Gospel Oak Schools*, the only schools not named Birkbeck, in Allcroft Road, Kentish Town, founded in October 1862; rebuilt in 1864 on a different site, the original premises being required by the Midland Railway Company; for boys, girls, and infants; head-master, Mr Edward Teather; with 428 pupils on the registers.

The subjects still taught there.

The subjects still taught are much the same as in the first Birkbeck School. Besides the common subjects in the infant and higher schools, Social Science and Physiology form regular and prominent studies; the classics are not taught, except Latin to those wishing it; the elements of the physical sciences, vocal music, and drawing (in most of the schools, under the Science and Art Department) are regularly taught, as well as French, German, the piano, and dancing, to the pupils who want them; industrial work and Domestic Economy to the girls; and physical exercises and drill, in well-equipped gymnasiums.

How the schools are carried on.

In each school, there is a full, and, in some, a very large staff of male and female teachers, sometimes numbering a dozen or more, as in the Kingsland School. The schools furnish so-called "middle class" education, being chiefly attended by the children of the higher class artisans and shopkeepers, and the like, though the children of poorer parents largely attend, an effort being made by many parents to send their children to these schools in order to finish their education. The fees have been raised from the original 6d. a week, or 6s. a quarter, to from 12s. to 21s., according to the subjects taken. The schools are almost, if not altogether, self-supporting, any deficiency being made up from an endowment fund established by Mr Ellis. The school-rooms are spacious, well lighted and ventilated, and abundantly furnished with all modern requisites.

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[1] Mr Shields has just died, in February 1878, at Bournemouth,—a very great loss to education. By all that knew him and saw him at work, he was acknowledged to be a teacher of rare skill and success, and an unusually enlightened educationist. George Combe frequently speaks of him in very high terms. He was one of the earliest and most enthusiastic of the workers on the Secular School platform, and was eminent in promoting its educational reforms.

The importance laid on Social Science there.

The subject on which most stress is laid, according to the wishes and aims of their founder, is Social Science, or "the Conditions of Human Well-being; so that," according to the prospectus of one of the schools, "the children may not go forth to take their part in the work of the world utterly ignorant of any safe guides of conduct; this teaching including, among other things, the knowledge of the laws relating to the production and distribution of wealth, the means by which wealth is made to accumulate, the advantage of division of labour and interchange, the laws which regulate wages and profits, the causes of variations in values and prices, the nature of the means adopted to facilitate interchange, but, above all, the courses of conduct which ought to and must be followed, in order to secure future happiness and well-being."[1] Science classes are also held in the evening, for those who have left school, in connection with the Science and Art Department, at which there are taught Physical Geography, Electricity and Magnetism, and Practical Chemistry, for which there are complete laboratories.

The principles on which they are conducted.

The learning of rote lessons is discouraged and subordinated to the training of the faculties, by objects and ideas themselves, and by the exercise of the mental powers on the subjects taught. No prizes are given, the spirit of rivalry, with its attendant evils, being altogether discouraged, and a love of knowledge and progress actively fostered for their own sakes. Moral training receives very great attention, according to the ideas of Mr Ellis as taught in his special subject, and corporal punishment is unknown. Monitors are employed in certain classes, after careful selection and preparation by the head-master, and they conduct their work under his eye and active superintendence.

Their success.

The schools are as successful as ever, so far as the teaching is concerned; but the attendance at some of them has decreased since the erection of the Board schools, where the fee is lower, and where better education is now to be had, than was possible in common schools when the Birkbeck Schools were first instituted. The attendance, however, is still large, as will be seen from the numbers given above.

During his whole life, Mr Ellis has continued to study his favourite subject, to teach it in schools, and to embody the results of his study and experience in several works, published from time to time, a list of which is given below.[1]

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[1] Prospectus of the Kingsland Birkbeck School.

William Ellis's services to education.

Such is a brief outline of Mr Ellis's labours for education and the improvement of mankind. As truly said by William Lovett, "few persons have done more for promoting a sound useful education among our people than this clear-headed, kind-hearted man. To him is due the high honour of first introducing the important subject of Social Science or Human Well-being into our common schools, and in simplifying what at one time was considered a very abstruse subject, so that children can very readily comprehend it." Mr Ellis has virtually created a new science by his works and teaching, his scheme not being mere dry, hard Social or Political Science, but a union of their principles with those of Morals and Religion, and a successful concentration and cultivation of the intellectual, moral, and religious faculties, by means of the great problems of social life.[1]

His Educational writings.

[1] Progressive Lessons in Social Science. Second edition. Fcap. 8vo. 1s. 6d.
Outlines of Social Economy. Third edition. Enlarged fcap. 8vo. 1s. 6d.
Introduction to the Study of the Social Sciences. Fcap. 8vo. 2s.
Outlines of the History and Formation of the Understanding. Fcap. 8vo. 2s.
Philo-Socrates. A Series of Papers, wherein subjects are investigated which, there is reason to believe, would have interested Socrates, and in a manner that he would not disapprove, were he among us now, gifted with the knowledge and familiar with the habits and doings of our times. Complete in Four Volumes. Post 8vo. 2s. 6d. each. Vol. I. Among the Boys. Vol. II. Among the Teachers. Vol. III. Among the Boys. Vol. IV. Among the Hindoos.
What Stops the Way? or, Our Two Great Difficulties. With some Hints concerning the Way. Crown 8vo. 3s. 6d.
A Layman's Contribution to the Knowledge and Practice of Religion in Common Life; being the Substance of a Course of Conversational Lessons introductory to the Study of Moral Philosophy. Post 8vo. 7s. 6d.
Thoughts on the Future of the Human Race. Post 8vo. 5s.
Education as a Means of Preventing Destitution. Post 8vo. 4s.
What am I? Where am I? What ought I to do? How am I to become qualified and disposed to do what I ought? Fcap. 8vo. 1s.
Where must we look for the further Prevention of Crime? 8vo. 1s.
Reminiscences and Reflections of an Old Operative. 3d.
London: Smith, Elder, & Co., 15 Waterloo Place.

Also other works either wholly written by Mr Ellis, or for which the materials were supplied by him, as: "Lessons on the Phenomena of Industrial Life and the Conditions of Industrial Success," edited by Richard Dawes, M.A., Dean of Hereford (Groombridge & Sons); "Helps to the Young," edited by the Rev. Wm. Jowitt (Longmans). George Combe enumerated Mr Ellis's works, with high praise, in several of his pamphlets.

[2] See especially his "Progressive Lessons" and "The Religion of Common Life."

Mr Ellis has also the merit of introducing a new style of teaching into school work, which he calls "the Socratic method of teaching." This is greatly cultivated in these schools, and was much used and recommended by George Combe. According to this method, the children themselves take part in the conduct of the lessons, *by asking questions of the teacher*, as well as answering them; so that there is a constant reciprocal communication between master and pupils during the lesson, by means of question and answer, suggesting difficulties, asking and giving information on special points, and criticising solutions offered, thus continually exercising the observing, reflecting, and higher faculties on the subject under consideration. This method deserves the careful attention of all educators, and should be practised in all schools.

His improvements in its method.

Mr Ellis's enlightened and self-ignoring philanthropy is above praise. He has not only spent thousands of pounds on the Birkbeck Schools, but has liberally assisted many others; while he has been ever ready, with silent unobtrusiveness, to succour the needy, many of whom have been social pariahs on account of their opinions.[1] He is now in his 79th year, and recently has been with reluctance obliged to discontinue his life-long educational labours.[2]

His philanthropy.

It only remains to add, that George Combe and Mr Ellis were intimate friends for many years, encouraging and assisting each other in their unpopular but admirable endeavours for human well-being.

6. THE MANCHESTER SECULAR SCHOOL MOVEMENT.

(a.) *Efforts made to secure National Education.*

The year after the publication of the celebrated Minutes of 1846 of the Committee of Council on Education, several earnest public-spirited men in Manchester, much interested in education, which was then beginning to draw increased attention throughout the country, and dissatisfied on several points with the measures adopted by Government, determined to make a local effort to demonstrate what a truly National System of Education ought to be, and to initiate a movement to show how it might be worked out in Lancashire.[3] In July 1847, they issued "A Plan for the Esta-

Efforts in Manchester in favour of Secular Education.

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[1] A warm and well-merited tribute is paid to Mr Ellis by Lovett, in his Autobiography, p. 360 *et al.*

[2] Additional information may be had regarding Mr Ellis and the Birkbeck Schools in Knight's "English Encyclopædia," and in "The Schools for the People," by George C. T. Bartley (Bell and Daldy).

[3] The original committee that started this movement consisted of the

The Lancashire Plan for Secular Education.

blishment of a General System of Secular Education in the County of Lancaster,"[1] addressed to the people of Lancashire. This document was elaborate, high-toned, and advanced. It developed a Scheme of Education by Public Schools, *for the whole people*, and not for the lower classes only, by means of a general Act for the appointment of school committees all over the country, according to the population; the establishment of common, infant, evening, and industrial schools, to which all children were to have the right of free admission, the expenses to be provided by equal taxation; the training of teachers in Normal schools, and their careful examination and certification, before being allowed to take charge of a school; the education to be altogether "secular" and undenominational, a selection from Scripture, determined by the committees, being allowed, if thought good; all ministers of religion to be excluded from being salaried officers.

"The Lancashire Public School Association."

At a meeting held in the Manchester Mechanics' Institution, in August 1847, an association was founded, called "The Lancashire Public School Association for Promoting the Establishment of a General System of Secular Education in the County of Lancaster." At this meeting, the above prospectus was adopted, as expressing the principles of the Association, with a view to its being introduced to Parliament as a bill, the motion being seconded by Mr Cobden, M.P. The committee included men of all varieties of theological and political opinion, and several clergymen since more widely known.[2] The Association set itself to agitate the subject, gather statistics, form an educational library, organise local committees in the chief places of the county, and hold regular meetings for reading and discussing papers on educational subjects.[3] The first public meeting was

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following, who first met in the vestry of Lloyd Street Chapel:—Thomas Ballantyne, Jacob Bright, W. B. (now Professor) Hodgson, Alexander Ireland (of the *Manchester Examiner*), Samuel Lucas, and the Rev. W. M'Kerrow.

[1] Drawn up by Mr Samuel Lucas, brother-in-law of the Right Honourable John Bright, Esq., M.P.; and correspondent of George Combe's. In this programme, Mr Lucas "took as his guide Combe's exposition of Horace Mann's System (in America), in the *Edinburgh Review* for July 1841." See "Life of George Combe," by Charles Gibbon, vol. ii. p. 238. In 1853, Mr Bright also boldly advocated Secular Education.—*Ibid.* vol. ii. 319.

[2] Such as the Rev. Samuel Davidson, D.D., the great Biblical scholar; the Rev. Dr Beard.

[3] In 1850, a collection of these papers was published, called "National Education not necessarily Governmental, Sectarian, or Irreligious," containing very good utterances on various aspects of the question.

held in January 1848, when a form of petition to Parliament was agreed on, which was signed by 11,000 persons in Lancashire.

It becomes "the National Association."

In 1850, a series of able counter lectures was delivered, in opposition to a National System, since published and known as the Crosby Hall Lectures, of which movement Edward Baines, M.P., and the Rev. Hugh Stowell were amongst the leaders. The Lancashire Association carried on the agitation with such activity, and evoked so much public sympathy in favour of their views that, in the same year, they held a great public meeting, at which Mr Cobden and Mr W. E. Forster took an active part. The Association then broadened its name and basis, and constituted itself "the National Public School Association," "to promote the establishment, by law, in England and Wales, of a system of Free Schools, which, supported by local rates and managed by local committees, specially elected by the ratepayers, should impart Secular instruction only, leaving to parents, guardians, and religious teachers, the inculcation of doctrinal religion, to afford opportunities for which the schools shall be closed at stated times in each week." The Association now enlarged its sphere of action, and organised above a hundred meetings in the chief towns of England, from Newcastle to Brighton.[1]

A counter denominational association formed.

In 1851, another committee, called "The Manchester and Salford Committee on Education," was formed, composed chiefly of churchmen, to advocate denominational education. Each of the committees prepared a bill for Parliament in 1852–3, the Secular bill being introduced by Mr Milner Gibson, the Denominational by Mr Joseph Brotherton. Both bills were remitted to the same committee of the House, and a large number of persons were examined in regard to them. The committee sat two sessions, and simply reported the evidence taken. So that Manchester was "the cradle and the nursery of two distinct schemes for State Education."[2]

In 1851, George Combe and James Simpson attended a great public meeting in the Corn Exchange, Manchester, and gave addresses in favour of a National Secular System. The meetings held by George Combe and his friends throughout Scotland, in the same year, were intended to agitate in favour of the same Na-

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[1] Organised chiefly by Dr John Watts, of Manchester, one of the most active labourers in this cause.

[2] Dr Hodgson (who took a very active part in the agitation), in an able lecture "On the Characteristics of the two Schemes for Public Instruction," delivered in the Town Hall, Manchester, in August 1851.

George advocates the National Association programme.

tional movement, and to support the principles of the Manchester Association, which were unanimously adopted. At the meeting held in Glasgow that year, after recounting the denominational efforts made in Scotland for National Education, George Combe thus spoke: "In England, a better scheme has been devised. There, a society of enlightened and philanthropic men has laboured for several years to introduce a system of Free schools for Secular education into that country. It now comprises men of high character and station, many of whose names are known to you, and, to their honour be it mentioned, also several ministers of the evangelical churches. After having agitated for several years for a bill for the county of Lancaster alone, they have recently been led to render their association national. They invited Scotland to join; but our countrymen, too intently engaged in the conflicts which I have described, declined to accept their invitation. I am authorised to say, however, that they will hail our accession, at any hour, with joy, and they invite us to unite our voices to theirs in demanding, from Parliament, a measure that shall impart Secular education to the people, free from all denominational control, leaving to parents and pastors the duty of weaving their own woof of faith into each child's mind, according to their own convictions of truth and the right way to salvation."[1] He concluded by moving:—"That the meeting approve of the basis of the Association for National Public School Education in England and Wales,"[1] which was unanimously carried, as elsewhere.

The opposition encountered.

The labours of the Manchester National Association were, of course, strongly opposed, and the usual epithets employed regarding them, such as "godless," and the like; but they met with great and growing sympathy.

The Secular Schools established in Manchester.

The first efforts at embodying these views as to National Education in a practical form in schools were, the opening of a Secular School in Manchester by "the Order of National Independent Oddfellows," in February 1851, founded on the principles of George Combe's Edinburgh School, and the Birkbeck Schools in London; the establishment of the Salford Mechanics' Institution Day School, in November 1853, on the same principles; and the projecting in 1853, and opening in 1854, of the Manchester Model Secular School, "to test the principles of the National Association, and to be, as far as possible, a model of the schools they sought to establish over the country."

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[1] From the *North British Daily Mail*, of Glasgow.

Subsequent educational efforts there.

The National Public School Association practically ceased to exist after the presentation of their bill to Parliament in 1852–3. Shortly afterwards, a compromise committee was formed, which also dissolved before long, from the nature of its component elements. About 1862, the "Manchester Education Aid Society" was founded, mainly by the efforts of the late Mr Edward Brotherton, a Manchester merchant, to pay the fees of the children of poor parents, irrespectively of the sects to which they belonged. This society published reports, and a paper on its behalf was read at the meeting of the Social Science Congress in Manchester, in 1866. This led to the formation of an "Education Bill Committee," which prepared the draft[1] of the bill introduced into Parliament by Mr Bruce, now Lord Aberdare, in 1867. This was amended and re-introduced in 1868, but it was finally dropped to make room for the English Education Act of 1870. Manchester has thus taken a most active and honourable part in the progress of National Education in Britain.[2]

(*b.*) *Schools established on the Secular School Platform.*

I.—The Free Secular School, founded by certain members of the National Public School Association.

The Manchester Model Secular School founded.

In order to exemplify and test the principles of the National Association, a school was projected in 1853, and opened in 1854, under the auspices and management of most of the earnest educationists connected with the Association.[3] It was organised by Mr Benjamin Templar,[4] who conducted it with eminent success for ten years. It received the name of the "Manchester Model Secular

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[1] Drawn up by Dr John Watts.

[2] See additional details regarding the Manchester movement, and George Combe's connection with it, in Life of George Combe, vol. ii.

[3] The committee was large and influential, including such men as Richard Cobden, M.P.; Thomas Bazley, M.P.; Sir John Potter, M.P.; Rev. Dr Beard, Rev. Dr M'Kerrow, Dr W. B. Hodgson, Dr John Watts, &c.

[4] Mr Templar is an enthusiastic educationist, and has acted as a kind of "Free Lance" in the exposition and defence of the unpopular principles of "Secular" Education, as truly understood, with its broad training and instruction, including moral and religious, on George Combe's platform. His writings on the subject are numerous and admirable, and include—"Questions for School Boards," with the experience of the Manchester Free School on compulsory education, free schools, moral and religious instruction, &c. (Simpkin, Marshall, & Co.); "The Religion of Secular Schools," read at the Social Science Association at Bradford in 1859; "The Religious Difficulty in Education," which George Combe considered "the best solution he had seen";

The subjects taught there.

School," because it was intended by its promoters to be a *model* or example of the kind of school which they thought should be universal, and by which the education of the country should be carried out. In accordance with the principles of the Association, the school provided education which was Free and Secular. The school being free, it had to be supported by voluntary subscriptions; but it was not intended thereby to be an example of voluntary schools, but of truly National schools,—free, because "supported by local rates, instead of by voluntary contributions and school pence." The curriculum was similar to that of the other "Secular" schools throughout the country, embracing Physiology, Social Economy, and a broad range of elementary Physical Science, which were regular branches of instruction, pursued from early years. Very great stress was laid on the Moral and Religious training of the children, by means of systematic lessons on moral principles and practice, and by lessons on science; and this seems to have been singularly well carried out, and a strong feature of the school. Mr Templar gives some admirable examples of this moral and religious training, in several of his works, extracts from which are given in the Appendix.[1]

The Moral lessons given.

In the direct Moral lessons, in which our duties to others were traversed, the aim was to show that moral duties were "not merely abstract, arbitrary, unreasoning commands, but had their reason in the nature of things, and commended themselves to our judgment." The lessons on Social Economy were found to be an "admirable means of educating the religious sentiments, as well as the thinking powers," demonstrating, "not only the *reality* of God's government in the affairs of man, but the *wisdom* and *beneficence* of that government." Mr Templar expresses his conviction, founded on long experience, when he says: "It was impossible for one to witness the pleasure with which the children hailed the return of the Moral and Religious lessons—their profound silence, their keen interest in all that was said, and their desire for more—without feeling that these lessons were producing deep religious impressions, elevated affections, and higher moral aspirations."[2]

"Moral and Religious Lessons for Schools," &c. He is also the author of "Reading Lessons on Social Economy"; "The Importance of Teaching Social Economy in Elementary Schools," read at the Social Science Association at Liverpool in 1858; "The Graduated School Arithmetic," &c.

[1] See "Questions for School Boards," "Ten Years' Experience of the Manchester Free School," and "The Religious Difficulty," by Mr Templar.

[2] From "Questions for School Boards."

The success of the school.

From newspaper and other reports, the school would seem to have been most successful, in respect of numbers, regularity, and efficiency. The percentage of attendance during the first ten years of its existence was unusually high, being 93 per cent., which is far above the general average of the country; although it consisted of the lowest class of the city, with free instruction, and no compulsion, the attraction being the school itself. The school was attended by children of all religious denominations, including Roman Catholics and Jews, and applications for admission were far greater than the accommodation allowed.[1]

It becomes "The Manchester Free School."

The school had to be maintained by the contributions of its supporters, of whom Mr William Ellis and Mr Martin Schunck of Manchester are especially mentioned by the committee for their liberality. This became a very heavy burden when continued for many years. In 1856, the committee presented a memorial to the Committee of Council on Education, soliciting inspection and aid by grants, and a second memorial in 1861,—both without success, because the Bible was not used in the school.[2] The committee were in consequence compelled, in 1861, to change their programme in this one point, and to allow the Bible to be read, but without note or comment; and a selection of passages from Scripture was prepared by Mr Templar, care being taken that they were the same, *verbatim*, in the Protestant and Catholic versions. This concession they made "under strong protest, as a matter of hard necessity, not because they had changed their opinion as to what public schools ought to be, and eventually must be."[3] The name of the school had accordingly to be changed also, and it was henceforth known as "The Manchester Free School." The school, however, continued to be conducted, under Mr Templar, as hitherto. It now passed under Government inspection and received grants; and it obtained, and still continues to obtain, very high reports. Mr Templar taught the school for three years under its new name, up to 1864, when he retired, to carry on a private middle-class school first in Manchester, and latterly at Southport.[1]

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[1] For very interesting accounts of the school, see Mr Templar's "Ten Years' Experience of the Manchester Free School" (Manchester: John Heywood), read at the Social Science Association in Manchester in October 1866, and published, in part, in their Transactions; and "Questions for School Boards" (London: Simpkin, Marshall, & Co.)

[2] Mr Templar read a paper at the Social Science Association meeting at Bradford in 1859, "On the Religion of Secular Schools, and their claim to Government Aid," on the ground, which he abundantly proves, that the instruction was "not only religious, but religious instruction of a high order."

[3] See the Sixth Annual Report of the school.

GeorgeCombe's connection with it.

George Combe never visited this school, but he was in correspondence with Mr Templar on the special educational features they both laboured to foster. He took great interest in the works written by Mr Templar on these subjects, and got the Henderson Trustees in Edinburgh[2] to issue an edition of "The Religious Difficulty." Mr Templar abundantly acknowledges his obligations to George Combe and Mr Ellis for his insight into education and for higher influence.

Its present condition.

He was succeeded by an assistant, who still conducts the school with great success, as proved by the Government reports, the passes being characterised by the inspector as "extraordinarily high." It continues to be managed by the same committee, of which the Mayor is an *ex officio* member, and which contributes the necessary funds, assisted by a legacy left to the school by a clergyman,[3] and it still remains a Free school for the children of the needy poor. On account of the great attention that requires to be paid to Standard work, to secure a high pass, much less time unfortunately can be devoted to those subjects which, under Mr Templar, formed a distinguishing feature of the school. The teaching of the Physical and Economic Sciences is now greatly given up—a matter for the deepest regret, after its success in the past history of the school.

II. Schools Independent of the Manchester Public School Association.

The Oddfellows' Secular School in Manchester.

(1.) *The National Independent Oddfellows' Secular School.*—This school was established some years before Mr Templar's, in February 1851, the year of the greatest agitation on National Education, by the above ancient Order, with the aid of Mr Ellis. It was organised and taught for a year by Mr Shields, late of the Birkbeck Schools at Peckham. It was then conducted by Mr John

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[1] "The Holly Bank School," Oxford Road, Birkdale, Southport, still conducted by Mr Templar, F.R.A.S. (1878).

[2] W. R. Henderson, Esq., of Eildon Hall and Warriston, an advocate of Phrenology, and friend of George and Andrew Combe, bequeathed all his property to Trustees to further Phrenology, specially naming a cheap edition of the "Constitution of Man" as one of their first efforts. See an account of the Henderson Bequest, in the "Life of George Combe," by Charles Gibbon, vol. i. p. 255.

[3] The Rev. Mr Thorn of Liverpool.

Its principles.

Angell,[1] now Science Master in the Manchester Grammar School, who had learned the Secular School system under Mr Williams in Edinburgh, and who left that city to take charge of this school, in June 1852. According to Mr Angell's prospectus, the school was founded "to afford a sound practical English education, of a higher character than that which was at that time within the reach of the working classes," and "was conducted in the same manner and on the same principles as the Williams Secular School, Edinburgh, and the Birkbeck Schools, London." "The course of education was purely Secular, it being the opinion of the directors that the teaching of Religion does not come within the legitimate domain of the ordinary teacher, but is a responsibility resting upon the parent and the clergyman, and one which can be duly and properly performed by them only."

Its teaching and discipline.

The subjects taught were the same as in the Williams and other schools already described, including, in addition to the common subjects, lessons on objects, Algebra, Geometry, Mensuration, Mechanics, Natural Philosophy, and Chemistry; and "the Laws of Health, and the principles of Social and Political Economy, in order that the children might understand how much their health, longevity, and general happiness are dependent upon themselves, and that they might also the more fully comprehend their position in society, and their duties towards it." "The especial object of the teaching was the training and development of the mind, rather than the tasking of the memory." The school was organised and conducted on a selection from "the monitorial system of Bell and Lancaster, the collective system of Stow, and the arrangements incident to the object-lesson system of Pestalozzi." "Particular attention was paid to Moral training, which was based on the principle that the moral feelings, in common with the physical and intellectual powers, can only be strengthened by actual exercise."

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[1] Mr Angell was early imbued with George Combe's principles, of which he became a strong advocate, going to Edinburgh to make better and more practical acquaintance with their working out. He had previously come under the influence of Mr William Ellis, as teacher of Chemistry in the London Mechanics' Institution, when the first Birkbeck School was founded. He was one of the earlier teachers to introduce science into common schools, and to teach it to *young* children, and has done much to extend its teaching in and around Manchester. He is the author of a capital paper on "Science Teaching," read before the College of Preceptors in December 1873, in which the true mode of science teaching is most clearly laid down and illustrated (London: C. F. Hodgson & Sons), also printed in the *Educational Times* of March 1874; "Animal Physiology," in Buckmaster's Series; "Animal Physiology," and "Magnetism and Electricity," in Collins' Elementary Science Series, &c.

Its history.

It was originally opened for boys only; but, in 1853, for girls also, under the care of Miss Barron, from the Glasgow Secular School, the girls being taught the same subjects as the boys, with the addition of Industrial Work. Mr Angell was Head-master of the school for more than a year, till he removed to Salford, to open the school there; after which it continued to exist for some time, till compelled to be closed on account of debt.

The Salford Mechanics' Institution School.

(2.) *The Salford Mechanics' Institution School.*—This school was opened by Mr Angell in 1853, in the Institution, Great George Street, Salford. It was established, according to the prospectus, on the principles of the Edinburgh and Birkbeck Schools, to afford a "more thoroughly useful and practical education" than was common. The same subjects were taught as in the last school, the system aiming at being "essentially character-forming in its results, and included Chemistry, Physiology, and Social Economy, because of their immediate bearing upon the happiness and well-being of society." As in that school, it was originally limited to boys, but girls were soon admitted, being taught by Miss Barron, from the Oddfellows' School. There were also evening classes in connection with it, at which a broad range of subjects was taught, embracing also Latin, French, German, several Natural Sciences, Physiology, Social Economy, and Mental Science, on which discussions were conducted. It was superintended by Mr Angell for four years, until 1857. The school is still very well taught, as an elementary school under Government inspection, and receives high reports. The special features of the school as conducted by Mr Angell ceased, however, to be maintained after he left it.

The Manchester Mechanics' Institution School.

(3.) *The Manchester Mechanics' Institution School.*—This was opened in September 1857, under Mr Angell as head-master, with a large staff of teachers. The course of instruction was similar to that of the Salford School, including the same wide range of subjects, with the Physical and Social Sciences. It was founded on the same principles as the former schools established by Mr Angell, though no reference was made, as in the other cases, to the schools on which it was modelled, the Edinburgh School having ceased to exist three years before. Evening classes were also conducted by Mr

Angell, in which the same subjects were taught as in the Salford school. Both the day and evening schools were very successful. In 1868, they were visited by the French Education Commissioners, appointed to report on the state of education in Britain. They spent two days in the schools, and their Report contains a high eulogium on the school and on the head-master; they describe, in some detail, a lesson on Chemistry given by him in the evening classes, and one on Common Things in the day school, the manner of the teaching striking them as novel, "the object being not so much to teach, as to inspire or develop a taste for science."[1] After twelve years' successful work in the school, which was conducted as a "Commercial and Scientific School," Mr Angell gave up connection with it in 1869, when he became Science Master in the Manchester Grammar School, where he now is.

Its present state.

The school continues to be successfully conducted, but many of its original features have ceased to characterise it, such as the teaching of Social Economy entirely, Physiology to the younger children and the whole school, and the special training of the religious and moral faculties through science, as advocated by George Combe, which Mr Angell sought constantly to carry out. It is now simply a very good middle-class school, in which pupils are educated for commercial life, and in which they are prepared for the Cambridge Local Examinations, and in the subjects of the Science and Art Department—Physiology, Physiography, Chemistry, and Botany being selected. A ladies' school has always been connected with the Institution, and was in existence before the boys' school.

These schools all Secular.

The schools connected with the Salford and the Manchester Mechanics' Institutions were not "Secular" in name, the obnoxious title being avoided, though they were "Secular" in reality, the Scriptures not being read, and no doctrinal teaching being given. None of the foregoing schools were in connection with the Manchester Public School Association, being originated and supported by the societies to which they were attached. They derived much encouragement and help, however, from the active public efforts of that Association.

7. MR BASTARD'S SCHOOL, AT BLANDFORD, DORSET.

One of George Combe's intimate friends was Thomas Horlock Bastard, Esq., of Charlton Marshall, near Blandford, in Dorset,

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[1] From the *Manchester Examiner* of March 19, 1868.

Mr Bastard founds a Labourers' Club.

who entered warmly into his views, and set himself to carry them into practice, and who still survives in his 83d year. Mr Bastard's first educational effort was the establishment of a Labourers' Club, one of the first in the country, which was opened in October 1855, under the presidency of Mr Ellis, and is still flourishing. Women are eligible as members, and, at this date, about one-third are women. "Both sexes," Mr Bastard writes, "may be seen of an evening reading, draught-playing, &c., at the same table, and twenty years' experience has shown the presence of the female to be attended with good effects, and with no cause whatever for objecting to their membership." The founder says that although not so successful as he had hoped, it is quite as successful as, with a due estimate of the intelligence existing amongst labourers, could be expected; and that "what we have to depend on for civilising and elevating the tone of the mass of the people is education, not only for imparting sound knowledge, but for the moral training of the feelings, habits, and tastes, and in the well-regulated club-house for both sexes we have, to a considerable extent, a place for such education."[1] It was in this Club-house, in 1857, that George Combe, then on a visit to his friend, gave the lesson on Physiology to the labourers and their children, already referred to, p. 106, which will be found in Part Third, chap. v.

He founds a Secular school.

In 1861, Mr Bastard issued the prospectus of a middle-class school, to be established in the town of Blandford, executed a deed for its endowment in 1862, and erected the school, called the Milldown School, which, with an adjacent fountain for public use, was opened in October 1864, under the auspices of the late Sir James Clark and others. It was established on the basis of the Birkbeck Schools, and was intended for the children of parents of moderate means, both boys and girls, an innovation that raised objection! It is made a "special condition that, whatever subjects are taught, Physiology, in connection with the Laws of Health, shall be a prominent branch of education in the school. And it is recommended—without its being made an absolute condition—that Economic Science, in illustration of the laws of industry and wealth, shall be another branch of education; and that the practice of needlework, housework, and gardening shall be systematically pursued, with the declared design

The special subjects taught.

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[1] An interesting account of this Club is given in an article on "Labourers' Clubs and Women Members," by Mr Bastard, in the *Englishwoman's Review* for July 1874.

of teaching the *dignity of labour*, encouraging healthful exercise, imparting general skill and handiness in the everyday needs of life, and practically training to *self-help;*" the donor trusting that the last part of this instruction clause "will receive marked attention from the managers and teachers, and that labour and work of all kinds will be set before the children in a true light, as estimable in themselves, and as the source and means whereby *self-help* or *independence* is attained." The children of all denominations are admissible; no religious creed is taught, the Bible only being read without comment; and, to secure its being quite unsectarian, no minister of religion is eligible for a trustee. It is wisely provided, also, that the rules as to the instruction given will be subject to revision every ten years, "so as, from time to time, to keep the school and its teaching in accordance with the progress of the age."

Its success.

The innovations made on common practice in the teaching caused opposition, but the school took, and though the numbers went down when under an incompetent teacher, under the present master, appointed in 1871, it is now quite full, having over forty in attendance, and is, it seems, successfully conducted.

Mr Bastard's relations with the Combes.

Mr Bastard had the highest respect for George Combe and his brother Andrew, and says that "all he has done in the way of education has certainly emanated from what he has learnt from their works, especially from the 'Constitution of Man' and 'Science and Religion' of the former, and 'Physiology applied to Health and Education' of the latter; and also from the works and schools of his friend Mr William Ellis." Conspicuously on the fountain above alluded to as adjoining the school, is placed a tablet, stating that it is dedicated "to the memory of his esteemed friends, George Combe and Andrew Combe, M.D., and of their zealous efforts to diffuse knowledge of the human constitution and of the laws of nature as conducive to the preservation of health and the advancement of morality." It is not a little remarkable, that the only monument yet erected in this country to the memory of George Combe, should exist away down in a remote town in the south of England!

8. OTHER SCHOOLS GIVING A BROAD EDUCATION.

The foregoing schools are described, as coming within the scope of this work, because George Combe was more or less connected with their establishment and progress. Besides these, there have been and

Other schools giving broader education:

still are other schools in different parts of the country in which the same principles, in whole or in part, have been carried out. The following are mentioned and recommended by George Combe and his friends:—

At King's Somborne;

The schools of the Rev. Richard Dawes, the Dean of Hereford, at King's Somborne, deserve special mention, and George Combe frequently refers to them with high commendation. In these a similar broad curriculum was taught, including Physical Science, Physiology, and Social Science, and in this respect they long stood almost, if not altogether, alone, as being established by a churchman and connected with the church.[1]

In Belfast;

At an early date, a broader course of studies was introduced into the Belfast Academy, of which the Rev. Dr R. J. Bryce was Principal. In 1828, the teaching of Natural Science, including Geology, Mineralogy, Zoology, and afterwards Natural Philosophy, was begun by his brother, the late Dr James Bryce, Mathematical Master in the High School there.[2]

Near Birmingham;

In 1829, the teaching of Physical Science was also introduced into the once famous Hazelwood School, near Birmingham, and the branch establishment of Bruce Castle, at Tottenham, near London, in courses of Natural Philosophy and Natural History; and an endeavour was made by public lecture on the subject, in 1830, to extend their teaching in schools generally. These schools were notable in many respects, not only in regard to the kinds and methods of instruction given, but in regard to their discipline, which was regulated by an elaborate "Code of Laws" of a remarkable type, chiefly administered by the pupils.[1]

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[1] See "An Account of King's Somborne School," extracted from the Rev. H. Moseley's Report to the Committee of Council; also Dean Dawes's "Hints on an Improved and Self-paying System of Education," both published by Groombridge & Sons. He is the author of several educational works, and also edited one of Mr Ellis's books, "Lessons on the Phenomena of Industrial Life and the Conditions of Industrial Success" (Groombridge).

[2] See an account of these attempts at broader education under the Rev. Dr Bryce, and an interesting letter by him in regard to them, in the *Phrenological Journal*, vol. vii. (for 1831–2), p. 355. The Rev. Dr Bryce also did early eminent service to education, giving a course of fifty lectures on it, in Belfast, Dublin, and London, from 1826, and did much to draw public attention to it as a science. When lately a candidate for the Bell Chair of Education in Edinburgh, he republished three of these lectures, under the title of "Lectures on Early Education" (Belfast: Alexander Mayne). Dr James Bryce was the well-known geologist, who perished recently on the shores of Loch Ness, while in the pursuit of his favourite science. He as also a devoted educationist.

In Edinburgh;

The establishment of the Edinburgh Institution, under the Rev. Robert Cunningham, for a broader education than the linguistic instruction prevalent at the beginning of the century, has already been noticed.[2]

In Newcastle;

In 1835, George Combe visited an Academy in Percy Street, Newcastle, conducted, since 1830, by the Rev. J. C. Bruce, which had been instituted by his father, and was far in advance of its day. "It was conducted," says George Combe, "on the modern principle of teaching both languages and useful knowledge; of exciting in the pupils an interest in and love for their studies; of relieving attention by regular changes in the subjects pursued; and, above all, of bringing a great amount of adult mind to bear upon the minds of the young, there being eight assistants employed in teaching about 120 pupils." The object of the school was "to cultivate all the faculties" by a broad range of intellectual studies and physical training. The subjects included Natural Philosophy, Astronomy, Chemistry, Geology, Mental and Animal Physiology, Gymnastics, &c. The work of the school successfully embodied many principles of true education.[3]

In Glasgow;

A broad curriculum of studies, much in advance of the time, was carried out in the "Glasgow Western Academy," founded, in 1842, for the middle and upper classes, in the West End of Glasgow. The programme of instruction and the views of the teachers were superior, and included careful moral and physical education, and a wider and more educative intellectual training than was then at all common, with lessons on science and an attempt to make education "a preparation for after life." The school existed for several years, and did very good work in its time, but it met with opposition on account of its unusually liberal spirit, and had finally to be given up.[1] It had several eminent teachers. Among these were the late Dr Middleton, one of Her Majesty's Senior Inspectors of Schools in Scotland, and Dr C. W. Connon, author of one of the best of our English grammars and other works. The prospectuses and reports were pervaded with broad and enlightened views.[2]

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[1] This scientific course is explained and recommended in an article on the "Utility of Early Elementary Instruction in the Natural Sciences," in the *Phrenological Journal*, vol. vii. (for 1831-2), p. 537, reviewing the above lecture by Mr Brayley, the Science Teacher in the Hazelwood School. The "Code of Laws" was published in London in 1827, edited by the Principals of the school, Rowland and Frederick Hill. An account of the school was published in 1822, and a second edition in 1825, called "Plans for the Government and Liberal Instruction of Boys in large numbers" (London: C. Knight).

[2] In Part Second, p. 89.

[3] An account of the school is given in the *Phrenological Journal*, vol. ix. (1834-6), p. 545.

In London.

Of schools now existing which carry out much of the programme of the Birkbeck Schools, there may be mentioned, the Rev. William Rogers' Schools in Golden Lane and Charter-house, London, the City of London Middle-Class School, and the International College, London.

9. THE CHARACTERISTICS OF THE SECULAR SCHOOLS.

The characteristics of the Secular Schools:

From the foregoing account, it will be seen that these schools have certain characteristics in common, which distinguish them from the schools of the time, and also place them greatly in advance of present general educational practice. Of these, the following may be noted :—

They excluded Dogmatic Theology.

(1.) *Their attitude towards Religion.*—This, in the eyes of the general public, was their most notable, most offensive, and, in fact, their only peculiarity. They rigorously excluded all Dogmatic Theology on the pleas of justice to all sects in attendance, of its belonging to the clergy as a vital part of their work, too important to be delegated to others, and of the work of the National School, as carried on by the State, being rightly confined to "secular" matters alone, the after-world being beyond their sphere. The schools had no antagonism to Theology, but, firmly and on conviction, kept it out of the common school, though, in many cases, offering the premises for its teaching at other times, and also advocating the establishment of theological schools where required.

They cultivated the Religious faculties.

At the same time, while excluding Theology, they as earnestly and carefully set themselves to train the moral and religious faculties, as being two of the most important sections of human nature, and as such requiring training in schools, which should educate the whole of the faculties, if education is to aim at completeness. This training in these schools would seem to have been remarkably good, thorough, and high-toned—far better than was then or is now common in schools, under the name of Religious Knowledge. Further explanations and illustrations of its nature and purpose will be found in Part Third, chap. iii., and in the Appendix.

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[1] Mr James M'Clelland was one of the chief promoters of the school, and spent liberally in its support. It is spoken of with commendation by Mr Robert Cox, editor of the *Phrenological Journal* (vol. xvi. p. 19), of which George Combe was then proprietor.

[2] See an excellent expression of the aims of general education, and of this special institution, by the English Master, Mr George Greig, given at a public meeting in Glasgow in explanation of the aims of the school, in the *Phrenological Journal*, vol. xvi. (for 1843), p. 19.

They prepared for the work of life.

(2.) *The Broad Education they gave.*—This was their greatest honour, and distinguishing peculiarity. It was an attempt to cultivate all the faculties, and to impart such a full range of instruction as would prepare children for after life; as in George Combe's scheme, their central principle was, while exercising as wide a range of faculty as possible, to train for the work of actual life. In this respect, they were far in advance of the time when they began their work, and also of present practice, in many respects. The attention they gave to the Physical sciences, and especially to Physiology and Social Science, as the God-appointed and only means by which a man can know himself and his surroundings in nature and society, and the practical and simple way in which these subjects were imparted, generally deemed so abstruse, stamped these schools at once as unique and advanced.

The subjects taught in them.

It should be understood that the teaching of these subjects was not confined to the older classes, but was given to the younger children also. They were essential portions of the work of the school from the first, being begun by means of object lessons systematically arranged, so as to develop into their more formal and technical teaching in the higher classes. George Combe's school in Edinburgh, however, stood almost alone in including systematic instruction in Mental Philosophy or Phrenology, on which he rightly placed great weight, as in many respects the most important, seeing that it explained the highest part of man's nature. Phrenology was also introduced into the High School of Glasgow in 1842, and taught to a large number of the older pupils by the English Master, Mr D'Orsey;[1] it was also taught in the Leith School, and in the St Andrew Square School in Glasgow; but the editor is unable to say anything of the nature and success of the instruction in these places. Mental Philosophy, as Phrenology, seems to have been taken up in the evening school of the

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[1] The Rev. A. J. D. D'Orsey, B.D., once well known as a phrenologist, and teacher of English, now Lecturer at King's College, London.

Manchester Mechanics' Institution while under Mr Angell, and the Mechanics' Institution evening classes in London,—these classes, however, being for grown pupils, whereas the subject was taught in the Edinburgh School to young children.

They introduced Science into schools.

(3.) *Their position in regard to the Teaching of Science in Schools.*—These schools were amongst the first to perceive the need of systematic scientific instruction, and to make its teaching a part of common school work, and this not merely as optional or superadded subjects, but as essential parts of their curriculum of studies. In this respect, they were pioneers of the present advanced views and practice in regard to Science teaching. George Combe in particular, and his fellow-workers, had the chief honour in inaugurating this excellent feature of modern education, and of initiating the agitation in its favour, which has since then been carried on by Spencer, Huxley, and other expounders of broader scientific education in school. Its present more successful advocacy is but the outcome of their earlier pleading and practice, at a time when the ideas were new and when opposition was stronger and more active than now.

The special character of their Science teaching.

But these schools were in advance of present general opinion and practice in several points: not only in the extent of their scientific range, including as it did the Social, Moral, and Mental sciences, and Natural Theology; but in making science an integral part of the instruction from the first, in teaching it to children at an earlier age than is yet recognised as possible, in basing the need of this earlier instruction on its special adaptation for training the budding faculties, and in their principle of selection of subjects—that of enabling our future men and women intelligently to know *themselves* and their *surroundings*, in nature and social life. Hence the different view they took of the sciences which ought to be taught, and the manner of their teaching, from that of many eminent scientists now living, and of the British Association, in its report on the "Best Method of Extending Scientific Education in Schools." However good and advanced this Report, for which all educationists should be profoundly thankful, it is yet defective in many respects; as in regard to the subjects it recommends, and those it omits, the manner in which they should be taught, and the age at which they should be begun. Physiology is assigned a low place, as merely informational and less educative, the very reverse being the case; the Social, Moral, and Mental sciences are ignored altogether; the teaching of science is greatly relegated to the later years of school life, instead of being made an admirable training medium from the first; while, on other points, its recommendations contrast strongly with the practice of the Secular schools.[1]

The influence they ought to have on this teaching.

Much still remains to be learned, regarding the scientific teaching of science, from the principles and practice of George Combe and his friends, and from the Secular schools, before it will be possible for science to take the position it ought to occupy in education from the earliest years, and truly develop in our children what should be one of the chief aims of its teaching in schools, a "scientific habit of thought" on all subjects.

Their application of the principles of education.

(4.) *Their Advance in applying the Principles and Practice of Education.*—This is specially noteworthy, and is amply apparent from the slight details already given, but will be seen much more clearly, in Part Third and in the Appendix. The more their system is looked into, the more will it be seen that these schools successfully practised more of the principles of Real education than was or is common. The central idea of making the training of the faculties the main work of education; the lessening of appeal to mere memory; the teaching of things rather than words; the smaller amount of task work exacted; the less frequent use of text-books, and, instead of this, exercising the faculties directly on the things taught; the general absence of cram; the wide range of faculties trained by the broad field of study; their aim at fostering a "scientific habit of mind" from the first—these are special and admirable features,[2] in which they were in advance of their own time, and which should still entitle them to act as models to others.

Their superior discipline and tone.

(5.) *Their superior Discipline and high Tone.*—These deserve special commendation. Their yearly reports, the opinions of all who visited them, whether favourable or not to their "secular" element, and the newspaper accounts of their examinations, all prove this beyond doubt. Their endeavour to train all the faculties harmoniously, and to appeal, in all subjects and lessons, to the moral and religious faculties, as well as the special lessons on the Principles of Right Living and Human Well-being, could not but produce an elevated tone and sweet atmosphere. The whole work, moreover, was coloured and pervaded by the thought, that all the subjects taught were expositions of God's Moral Government of the World, which would help to cast a halo of sacredness over the school work and the after life of the children.

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[1] See this ably argued and illustrated by Mr Angell, and the whole subject very well traversed, in his paper on "Science Teaching," already referred to, in which he criticises the above report. See also an excellent paper by the late Professor Payne, "The True Foundation of Science-Teaching" (Henry S. King & Co., London).

[2] Some of these features are well put in Mr Angell's "Science Teaching," which is largely an expression of George Combe's principles.

Their practice as to corporal punishment;

Specially noteworthy in their discipline, was the total or almost total absence of corporal punishment. This was abolished altogether in the Williams School and in the Birkbeck Schools, of which very interesting details will be found in the Appendix. Mr Templar worked very much without it in the Manchester Model School, but was not able to dispense with it entirely, on account of the large numbers in attendance, and from the children being from the lowest parts of the city. Grave moral delinquency was never punished corporally by him, but "by earnest remonstrance with the boy in private, and letting him feel he had to *re-make* his character, and that confidence could be regained only by continued well-doing."[1]

And emulation.

Other excellent features were, the little use of emulation and prize-giving, and the discouragement of the common over-appeal to the Love of Approbation in the child, on which George Combe had very decided and advanced notions, as will be seen in Part Third, chap. iii.

They subordinated linguistic instruction.

(6.) *Their aiming at Real Education as contrasted with Linguistic.*—This was one of George Combe's strong points, and it was one of the features of these schools. It was the outcome of the attempt to train the faculties, by *exercise on their proper objects themselves*, which are furnished by the sciences of the human and physical worlds. It was also intended as a protest against the over-attention to word-teaching and languages, especially classics, which had too long ruled in all schools, elementary and higher. Language was looked upon by them, as an instrument for obtaining and using the knowledge of real things, and, when taught, was taught with this view. No classics were introduced into these schools, except Latin in some of them to those that wished it. The selection of the modern languages taught was determined by their utility; and these included French, and also German in some of the schools. These schools were among the first systematically to subordinate linguistic and foster Real education, and practically to embody the modern views on these subjects which increasingly prevail.

They included most social ranks.

(7.) *They included all classes of the population, except the highest*, which is the last, as a rule, to be reached by any reforms in traditional practice. The Manchester Model School and Lovett's School were intended for even the lowest strata of society; the Edinburgh, Leith, Glasgow, and Oddfellows' Schools, for a higher artisan class; and the Manchester Mechanics' Institution, Mr Bastard's, and the Birkbeck Schools, for a higher class still, the well-to-do middle and the upper. They have, therefore, exemplified the broader education they offered, in most sections of the community.

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[1] Letter to the editor.

Their relations to National Education.

(8.) *They were intended to be Models of what a National System of Education ought to be*, and of what their promoters hoped it would become—non-sectarian, non-theological, but moral and religious, national and universal, because including the *whole* population, supported by rates and free, and broadly preparative for domestic, social, professional, and political life. Though necessarily supported, in the circumstances, by voluntary subscriptions, they were intended to be examples of *free*—that is, rate-supported—schools; the Glasgow, Manchester, Edinburgh, and Lovett's schools being so expressed, and so intended; the Birkbeck and Mr Bastard's schools being less overtly, but really, in the same class.

Their relations to Government.

(9.) *They were refused participation in Government Grants.*—This was unavoidable from the character of the Acts distributing these grants, and the limited powers of the Committee of Council, who had no option in the matter, the reading of Scripture being specially prescribed as a condition of these grants. This caused great annoyance, and gave rise frequently to hard speech against the Committee. It was legitimate to criticise the Government which passed such narrow measures for the disposal of public moneys for education, but not the powerless administrators of the Acts. The endeavour to obtain a change in the conditions was the only right course of action. Though they were long unsuccessful, their principles are now largely recognised and acted on in the Education Bills of 1870 and 1872. Government aid, however, has never been asked for the Birkbeck Schools.

Their title as "Secular."

(10.) *The title "Secular"* was unfortunate in all respects, and was no doubt the chief cause of their unpopularity, and of the misrepresentation and abuse the schools and their supporters encountered. As has been already explained, when originally used by George Combe, who introduced the name in its application to education, it signified much more than "secular" as distinguished from ecclesiastical or theological, and denoted *all* education that belonged to and prepared a child for this *seculum*, this age, or world, or system of things, as contrasted with the future world and its relations: it simply meant *this-world* education, as contra-distinguished from *other-world* education. It was, therefore, intended to characterise the education of the man and citizen, which it was held to be the duty of the "secular" Government to provide, not his education as preparing for a future state, which the Churches should undertake.

Their relation to the "Secularists."

Of course, this position, though broad and logical, could scarcely be popular, from the opinions then prevalent on education and religion, and from the fact that all education had so long been conducted by, and was supposed to belong solely to, the Churches, by which the spiritual and secular had always been united. Unfortunately, in addition to these elements of unpopularity, shortly after the term had been used by these schools, the same designation was adopted by the anti-theological party now known, and not inappropriately, as "Secularists," with pronounced polemical, rationalistic, and destructive aims. Both in the popular and clerical mind, therefore, which took no pains to make nice though important distinctions, these schools became associated with this most unpopular party; and, notwithstanding abundant explanations, remained so to the end, and were condemned accordingly. This was unavoidable, but unfortunate and unjust; and abundant use was made of the confusion of name and aim between a broad educational movement and a religious sect.[1] But the name once used, could not, without further misunderstanding, be abandoned, and was not given up by those who adopted it till compelled by Government regulations to do so, as in the case of the Manchester Free School. The title was, nevertheless, a very unhappy one, because it characterised, as already said, an excellent educational endeavour solely by a minor peculiarity. Mr Lovett, Mr Ellis, Mr Bastard, and others wisely avoided the obnoxious "nickname," as they felt it to be; though even the name "Birkbeck" caused antagonism to these schools on account of the broad views of the excellent Dr Birkbeck !

The title an unhappy one.

The men who founded and conducted them.

(11.) From the foregoing slight sketch of these schools—for with the abundant materials at command, it is but slight—it must be evident, that the men who organised and supported them were enlightened, earnest, and advanced educationists. It is equally certain that the men who carried on the schools, the teachers themselves, were, without exception, men of no common type. Of this, the fact that they were so far before their time in their views of education, and successfully carried on their work amidst unpopularity, misrepresentation, and social disabilities, is sufficient proof. But they have also shown their talents in their admirable elucidations and defences of their work in their reports and in other publications, which are of real value. Nothing has struck the editor more, in obtaining the information required for this chapter, than the superior endowment, the broad, clear, and well-digested views, and the high and earnest tone of the teachers who were employed in these schools. "Indeed," as George Combe says, speaking of the teachers of these Secular Schools, "we consider it a sacred duty of the press to do justice to the merits of the able, energetic, well-instructed, and laborious men who have dedicated their lives to the introduction of a superior system of education for the people. They are benefactors of their country."[1]

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[1] See some extracts on the subject, and a special letter from Mr Williams in regard to it, in the Appendix. Mr Cobden proposed to call the "Secular" education party "Separatists," but the term did not get into general use.

The chief workers in this field.

The wonderful influence of George Combe is abundantly apparent in this field of labour, as in others. He and Mr Ellis, and, in great part, Mr James Simpson, were the leaveners and master-spirits of the movement—George Combe and Mr Simpson actively and publicly, Mr Ellis unobtrusively, but not the less really; while all the others did admirably. Without exception, those who have engaged in the work, especially the teachers, confess with reverence and gratitude their obligations to George Combe and his books—especially his "Constitution of Man"—as the source of both new inspiration and clear light, to impel and guide them to work for the advancement of mankind; and those who have had the privilege of coming into contact with Mr Ellis bear equal testimony to his remarkable influence over them for good.[2]

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[1] Article on "Secular Education," in the *Westminster Review*, for July 1852.

[2] In a discriminating and finely-written dedication of his valuable book on the "Education of Girls and the Employment of Women" (London, Trübner, 1869), Professor Hodgson says, amongst other things, that William Ellis "has long and effectively vindicated, in all teaching of both sexes and of every rank, its true place for Economics as a branch of Moral Science, needful and fit to guide conduct, to train character, and to shape condition, as well as to develop intelligence;" and that to him "very many (the author being one) owe much for great personal kindness, but, above all, for a higher, wider, clearer, more definite, practical, consistent, and inspiriting view of education, as it ought to be, and will be."

PART THIRD.

HOW SHOULD EDUCATION BE CONDUCTED?

THE PRINCIPLES AND PRACTICE OF TRAINING AND INSTRUCTION.

PART THIRD.

CHAPTER I.

THE GENERAL PRINCIPLES OF EDUCATION.[1]

1. THE GENERAL OBJECTS OF EDUCATION IN RELATION TO THE FACULTIES.

The mental faculties need cultivation, guidance;

THE human faculties consist of Animal Propensities, Moral Sentiments, and Intellectual Powers. They have a natural tendency to activity, greater or less in proportion to the size of their organs, and, being active, each serves to suggest certain desires, emotions, or intellectual conceptions to the mind. The organs of the Propensities, namely, Amativeness, Combativeness, Destructiveness, Secretiveness, &c., are the largest; those of the Moral Sentiments, the next in size; and the Intellectual organs, the smallest. Farther, the Propensities and Sentiments are mere blind impulses, which lead to happiness and virtue when well directed, and to misery and vice when misapplied. Thus, Combativeness and Destructiveness, when directed by Benevolence and Justice, give boldness, enterprise, and energy to the character, and fit a man for becoming the terror of the wicked and the foe of the oppressor; when left unguided, they may lead to furious contention, indiscriminate outrage, cruelty, and murder. In like manner, the Moral Sentiments require direction. Benevolence, unenlightened by intellect, may lead to hurtful profusion; Veneration, unguided by reflection, may degenerate into superstition; and, lastly, the Intellectual powers, having the smallest organs, possess the least natural energy, and require not only the most assiduous cultivation to give them activity, but, being in their own nature mere general capacities of observation and reflection,

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[1] In order to understand more clearly the principles expounded in this Part, it will be well for the unphrenological reader to consult the explanation of the Phrenological faculties contained in the first part of the Appendix.

And knowledge.

demand a vast store of knowledge as materials for their exercise. The organ of Language, for example, requires not only to be vigorously exercised to produce facility in writing or speaking; but, as the mind is not informed by instinct of the meaning of words, labour and attention must be bestowed to acquire a knowledge of terms, as materials on which the faculty of Language may exercise its powers. In short, nature, by means of this organ, gives the mind a capacity to learn words, and after they are learned, to use them; but she does not inspire us with a knowledge of their signification, in the same way as she implants in the bee an instinctive tendency to resort to particular flowers that contain honey. By means of the organ of Causality, she enables the mind to reason, and to anticipate results; but this also is a mere general power, and requires, for its successful exercise, an extensive observation of occurrences and their effects; it does not instinctively anticipate the future, but, after the mind has discovered, by observation, that fire communicated to gunpowder produces explosion, it gives the feeling that the same train of occurrences will happen again, and enables the individual to regulate his conduct in the knowledge of this result.

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The state of an untrained mind.

An uneducated mind is one in which Animal impulses run riot—strong, vivacious, and undirected; in which Moral Sentiments sometimes shed the benign influence of their proper nature, but oftener suggest wild wanderings by their misdirected energy; and in which the Intellectual powers are obtuse through want of exercise, and inefficient in consequence of the absence of knowledge. This is a correct picture of a mind entirely in a state of nature. In civilised society, some extent of education is forced upon every individual by the intelligence and example of others; but in proportion to the scantiness of his cultivation, is his approach to the condition now described.

Education should give knowledge;

An educated mind presents a different picture. Happiness results from the legitimate use of all the mental faculties; and the constitutions of the moral and physical worlds, when thoroughly understood, are so admirably adapted to each other, that full scope is afforded in nature for the legitimate gratification of every faculty of the human mind. The first effect of education, then, is to present the intellectual faculties with materials on which they may act, —that is, persons who have received stores of hereditary information [illegible] quired additional ideas by experience, communicate to the [illegible] nd a knowledge of the objects and creatures which exist, and which are the sources of good and evil to mankind. This knowledge constitutes the materials on which the faculties of the young may act. Thus, the primitive colours and their combinations being exhibited, the mind, by means of the organ of colouring, derives pleasure from contemplating them, and desires to apply them in producing new combinations. A description of particular kinds of industry, or of certain international laws, or of certain domestic institutions being communicated, the mind, by means of the organ of Causality, takes delight in knowing these, in tracing the good or evil produced by them, and it anticipates the result of new combinations.

Exercise the Intellectual faculties;

The Intellect, thus provided with knowledge, and strengthened by exercise, is in a condition to discover what form of indulgence is fitted to afford the highest and most lasting gratification to the Propensities and Sentiments, and it guides and directs them accordingly. Thus the propensities of Amativeness, Philoprogenitiveness, and, Adhesiveness have large organs, and, at an early period of life, act with intense vivacity. The individual whose mind is unenlightened by knowledge, whose Intellect is unexercised and unaccustomed to control or guide his desires, and whose Moral Sentiments are not directed to practical objects, will yield to the first impulse, and either resort to the haunts of vice, or marry, regardless of the future and all its consequences. Another individual whose mind has been instructed in the nature of his own physical and mental constitution, trained to perceive distant consequences and to regulate his Propensities with a view to the future, and whose Moral Sentiments have been accustomed to act in concert with, and to support by their dictates the conclusions of, his Intellect, will have a vivid perception of degradation, disease and misery, as the result of illicit indulgence; and of poverty, anxiety, and depression, as the consequence of injudicious marriage; and will be fitted, if not in every case to resist effectually, at least to withstand, a far higher degree of temptation than the other.

And guide the Propensities and Sentiments.

Not only so, but there is a prodigious difference between the actual pleasures enjoyed by the educated and uneducated. The direct gratification of the lower Propensities is short-lived, coarse, and unsatisfactory; and when the impulse of excitement is over, the Moral Sentiments enter into activity and condemn the conduct, so that no agreeable emotion arises from reflection on the past. The indulgence of these, on the other hand, under the guidance of the Moral Sentiments, is pleasing at the time, and not painful on

The pleasures arising from Real Education.

The pleasures arising from Real Education.

retrospection; while the direct exercise of the higher Sentiments themselves and Intellect affords the highest present delight, and the most lasting satisfaction in futurity. The practice of Benevolence in the daily duties of life, in avoiding all occasions of giving pain to others, and manifesting a warm and sincere regard for their happiness in the little offices of kindness for which the private circle affords so delightful a theatre—the exercise of Conscientiousness, in curbing our humours and desires, so as not to overstep the boundaries of justice, and permitting and encouraging every indulgence and gratification consistent with duty to those who are dependent on or connected with us—the practice of Veneration, in piety towards God, and in habitual deference and respect to our fellow-men, bearing with their weaknesses, and avoiding irritating and humiliating conduct towards them—the exercise of Ideality, in appreciating and luxuriating amidst the beauties of nature and of art; and the exercise of Individuality, in becoming acquainted with the countless objects which exist around us, and their various properties—of Reflection, in tracing their wondrous combinations—of the minor Knowing organs which are conversant with forms, colours, numbers, music, and their countless products:—the delight, we say, which the educated mind is capable of extracting from the legitimate exercise of all these admirable faculties, leaves the uncultivated mind immeasurably behind in the very article of pleasure, even supposing enjoyment to be the sole object of human existence.

Let us never hear, then, of a state of ignorance being one of innocence, of purity, or of happiness; or of education unfitting individuals for the practical duties of life.[1]

The aims of Education in regard to the faculties.

The objects of education, using the word in its widest and most legitimate sense, are—

1*st*, To increase the energy and activity of those faculties of the mind and body which are naturally too weak;

2*d*, To repress the inordinate action of those which are naturally too strong;

And, 3*d*, To give to the combined operation of the whole such a direction as shall most certainly and effectually increase the happiness and ext[illegible] sphere of usefulness of the individual.

To attain [illegible]ds, our efforts must be conducted in strict

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[1] *Phren. J*[illegible]i. (for 1824-5), p. 432. Of course, in the last sentence, Geo[illegible]ns, as he elsewhere explains, Real Education.

Hence the need of knowing these and their laws.

obedience to the laws which nature has established for the regulations of the functions of both mind and body. It is, therefore, particularly necessary that we should be previously in possession of a true theory of the human mind, capable of unfolding to us not only the number and functions of the primitive mental faculties themselves, but also the organic conditions which conduce to their greater or less degree of energy,—the laws which regulate their activity,—and the effects produced upon the general character by their different proportional combinations. Accordingly, the want of such a theory of mind is the true reason why the most profound writers on education are still so much occupied in discussing contested points of very secondary importance, instead of starting, as is recommended by Mr Stewart, from undeniable first principles, obtained from "a previous examination of those faculties and principles of the mind, which it is the great object of education to improve";[1] and we are therefore disposed to regard it as in itself no small proof of the truth and value of the Phrenological philosophy, that it already affords a sure, stable, and consistent basis for the erection of an improved system of education, and that it supplies the *desiderata* above stated.[2]

The principles by which they may be cultivated.

After having discovered the particular dispositions which are remarkable either for strength or deficiency in the child, our next object ought to be to cultivate them, that is, to repress the manifestations of those which are too energetic, and to increase the activity of those which are too feeble. As education is at present conducted, the Feelings are not systematically cultivated at all. No system of philosophy has hitherto taught that Feelings depend upon faculties; that the power of experiencing them is different in different individuals; and that that power may be increased in those in whom it is weak, by cultivating the faculties which produce them, in the same manner as the power of reasoning may be increased, by cultivating the faculties of the understanding. Hence it has never formed a regular part of any plan of education to increase the power of feeling benevolence, of feeling justice, or of feeling veneration, by the special exercise of the faculties upon which those Sentiments depend. Nor has any plan been laid down for cultivating the minds of individuals according to the peculiarities of their natural constitutions. Indeed, no such plan could be devised, for we have hitherto possessed no philosophic means of discovering what the peculiarities of individual constitutions are. The only cultivation which the Sentiments receive, according to the present system, is from the casual influence of example. This mode of cultivation is, no doubt, good in itself, and, as experience shows, highly beneficial; but it is best suited to the case of individuals who are prone to virtue from innate dispositions, for we generally perceive the more intractable to be very little benefited by it.[1]

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[1] Dugald Stewart's Philosophical Essays, first published in 1810.

[2] *Phren. Journal*, vol. i. (for 1823–4), p. 578.

Happiness attainable only by the harmonious activity of the faculties.

To render man happy, his body must be maintained in a state of constant health. The nervous system, including the brain, is the fountain of all enjoyment in sensation and emotion, and it is most intimately connected with respiration and digestion. When all external stimulus is withdrawn, and the individual is thrown back entirely on his own sensations, he will experience a pleasing consciousness of existence, when in perfect health. If he does not do so, if any sensations of weakness, listlessness, irritation, anxiety, or unhappiness be experienced, the corporeal frame is not in its best condition; it is not in that state which the Creator, in endowing it with the susceptibility of happiness, intended it to be, and, by bestowing reason on man, commanded it to be maintained. To secure health, the individual must exert his muscular frame for several hours every day in the open air, or at least exposed to a free circulation of air; he must observe the rules of cleanliness and temperance; he must exercise his moral and intellectual faculties several hours every day, on pursuits congenial to their nature; and he must sleep in well-aired apartments, and neither for too long nor too short a time.

How the conditions of happiness are violated.

The institutions and manners of society at present render it absolutely impossible to fulfil these laws of our nature. Mechanics are compelled to labour with their muscles beyond what is serviceable to their moral and intellectual enjoyment; men in the middle ranks of life are confined within shops, counting-houses, or writing-chambers, so as to be denied muscular exertion adequate to maintain perfect health, and their pursuits have reference so exclusively to objects connected with the gratification of the inferior feelings, that no adequ[illegible]ulus or cultivation is afforded to their moral and intellect[illegible]; while ladies generally, and men in the higher ranks [illegible]n particular, are rendered miserable through want of objects of interest calculated to excite them to that degree of bodily and mental exertion without which the nervous system becomes a mass of disease, and the fountain of inexpressible suffering. The males of the higher class, who seek to relieve themselves from this inanity and its consequent miseries, betake themselves to fox-hunting, horse-racing, prize-fighting, cigar-smoking, drinking, and seduction; in short, through want of objects and pursuits calculated to gratify their rational nature, they abandon themselves to the indulgence of their animal propensities, and corporeal appetites,—except a few, whose superior faculties carry them to literature, the improvement of their estates, the fine arts, or politics, as occupations.[1]

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[1] [illegible] on Phrenology" (1819), p. 137.

Education directs but cannot eradicate the faculties.

It has been further asked, by way of objection, "Does Mr Combe deny that the boy whom he rejected might have had a good character, notwithstanding the indications of his original Propensities? If he denies this, he denies a proposition which he himself has always stated, and from which he derives the practical value of Phrenology, namely, that the original Propensities can be corrected, and even eradicated, by education, and other means." I have not stated that the "original Propensities can be *eradicated* by education and other means." What I have said is this,—that all the faculties may be *directed* to proper objects, and when so directed, their action will become good. But to guide strong animal Propensities to virtue, there must be a directing power. If the individual possess vigorous moral and intellectual organs, he will be a law and a guide unto himself. If, however, these be deficient, which was the case in the boy alluded to, then I certainly maintain that strong animal feelings will *not guide themselves* to virtue. In this case, the directing power must be supplied *from without*.[2]

2. THE BRAIN AS THE ORGAN OF MIND.

The brain is developed only by exercising it;

The brain is the organ of the mind, and it must be exercised itself in its own functions, in order to promote its favourable development. You would naturally exercise the muscles in walking, running, or handling objects, in order to increase the vigour of the legs and arms. You must exercise the brain in feeling and in thinking, in order to give it the same advantages, viewed as the organ of the mind, which you give to the muscles of the legs in walking.

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[1] *Phrenological Journal*, vol. vi. (for 1829–30), p. 623.

[2] "System of Phrenology," vol. ii. 324–5.

In proportion to its strength.

The first condition of healthy exercise is, that it bear a due proportion to the strength of the organ. If you force a young child, whose bones and muscles are soft and slender, to stand or walk to an extent beyond what these organs can successfully bear, you will inflict misery on the infant and lasting deformity; you will bend its bones into unseemly curves, and render its muscles for ever feeble. In like manner, if you over-task the mind of a child, in mental emotion and intellectual exertion, you may permanently damage its brain. If you neglect to exercise the faculties to due activity, you may leave it feeble and imperfectly developed.

Suppose you have a child with a large anterior lobe and nervous temperament, you will need to prevent him injuring his brain by over-exertion; if of a lymphatic temperament, you will require to rouse him by judicious stimulus and exercise; if of a sanguine temperament, he must have more muscular action.[1]

The conditions of its right exercise.

What does the proposition that the brain is the organ of the mind imply? Let us take the case of the eye, as somewhat analogous. If the eye be the organ of vision, it will be conceded, first, that sight cannot be enjoyed without its instrumentality; secondly, that every act of vision must be accompanied by a corresponding state of the organ, and, *vice versa*, that every change of condition in the organ must influence sight; and, thirdly, that the perfection of vision will be in relation to the perfection of the organ. In like manner, if the brain be the organ of the mind, it will follow that the mind does not act in this life independently of its organ, and, hence, that every emotion and judgment of which we are conscious is the result of the mind and its organ acting together; secondly, that every mental affection must be accompanied by a corresponding state of the organ, and, *vice versa*, every state of the organ must be attended by a certain condition of the mind; and, thirdly, that the perfection of the manifestations of the mind will bear a relation to the perfection of its organ.

Hence the need of studying the Physiology of Mind.

These propositions appear to be incontrovertible, and to follow as necessary consequences from the simple fact that the mind acts by means of [illegible]ns. But if they be well founded, how important a study does t[illegible] organs of the mind become? It is the study of the mind itself, in the only condition in which it is known to us; and the very fact that, in past ages, the mind has been studied without reference to organisation, accounts for the melancholy truth, that, independently of Phrenology, no Mental Philosophy suited to practical purposes exists.[1]

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[1] From MSS.

The physical conditions of healthy growth of brain.

The brain grows till twenty-two or twenty-three in almost all, and till twenty-eight or thirty in many individuals. It is therefore incomplete both in constitution and size at birth, and only gradually gains solidity, magnitude, and vigour.

In infancy and youth, the habits of the child should bear reference to the state of his brain. Consider the brain as a growing organ. Viewing it as an important part of the body, you must treat it in the same manner as you would any other organ which you desire to bring to maturity and perfection. One-eighth of the whole blood of the body passes through it. The blood is the grand element of nutrition, and the stimulant to activity to all the organs. To be capable of nourishing the brain, it must be well oxygenated, and well nourished itself,—that is to say, the respiratory and digestive organs of the child must be preserved in high health. To aerate the blood, the child must live and sleep in a large well-ventilated apartment. It must also be induced to exercise its muscles. To preserve digestion entire, it must be kept clean in the skin, be exercised, live in good air, and have a proper quantity of sleep and food. If these things are done the physical conditions for healthy growth of the brain, viewed simply as an organ, are realised.[2]

The effects of over-exercising the brain.

From the fact of the brain being the organ of mind flow many important results. One of these is, that being weak and immature in childhood, like the legs and arms, it cannot bear much exercise; that it strengthens with age; and that the exercise or labour should be proportioned to the strength. You cannot impose excessive labour on the brain, any more than on the rest of the body, without doing injury.

Hence the great folly of that constant mental application which it has been, and still is, to a great degree, the endeavour of parents and teachers to keep up. In Scotland, at the public schools, we used to be in attendance seven hours a-day—from nine to one, and two to five; and the result was this: for an hour in the morning, we were able to attend assiduously to our lessons, but then the brain

[1] "System of Phrenology," vol. i. 23-4.

[2] From MSS.

became exhausted and the scholars restless; they were poking each other with their fingers, pinching each other, flirting peas, and scratching the desks. Some became noisy, some listless. Then came the birch, for the purpose of infusing new stimulus into an exhausted brain. The scholars were rendered miserable, and induced to look on the school with disgust; and the teacher was thus harassed and discouraged.[1]

Examples of its wise exercise;

Now, when the effect of these things is better understood, many of the schools of Edinburgh have reduced the time of tuition to *four* hours a-day—two hours at a time; and it is acknowledged that more Greek and Latin is learnt in that time than previously in seven hours. The scholars attend the school with pleasure, and the teacher passes his time with satisfaction. Nay, one teacher[2] has reduced the time of attending to Greek and Latin to two hours a-day, and still challenges comparison with the rest of the schools. Mr Fisher,[3] a gentleman who takes scholars of from five to eight, has found the greatest advantage in the changes which he has introduced. Instead of keeping them constantly at work by rewards and force, for three or four hours in succession, he takes this plan: For the first hour, he can obtain their attention without any difficulty. At the end of that time, he sends them out to run round St Andrew Square for a quarter of an hour. When they are playing, he keeps the windows open, and thus ventilates the room. In this way, the children learn more, and enjoy such pleasure that their parents complain that they would rather be at school than at home; the teacher's task, too, has become an agreeable instead of a painful one.

Of its unwise exercise.

I have been to your public schools, and would advise you to go and judge, for yourselves, how far the laws of Physiology are observed. The children go in at nine and come out at three, having all the time but half-an-hour's intermission. Mature as our brains are, we take care to impose less on them than on the weak brains of the young. If I should lecture to you six hours together, you would say, "God preserve us!"[4]

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[1] Painful but interesting details regarding the above system, still far from obsolete, are given by George Combe in his Autobiography, in the first volume of his "Life" by Charles Gibbon, p. 23, *et seq.*

[2] Mr Robert Cunningham, afterwards rector of the Glasgow Established Church Normal School. See a short account of him, at p. 89. A statement of his system of teaching is given by himself, in a letter to James Simpson, in Sin[illegible] Philosophy of Education," Appendix No. II.

[3] [illegible]ught in St Andrew Square, Edinburgh.

[4] [illegible]ectures, edited by Boardman, p. 334–5.

By teaching habitually one thing or one set of ideas, say reading or arithmetic, a teacher will weary out that power, and leave the others idle. He should alternate the studies. A horse is refreshed by a hill, because, in descending it, different muscles are employed, and those that pulled up are rested.

The need of alternating studies.

The young system cannot bear long action. The brain is soft and not fully developed, and must not be long tasked. There should, therefore, be an alternation of muscular exercise and mental effort. The *whole organs* of the body demand exercise as well as the brain, and it is only by such alternation that this can be done.

This alternation does not distract the attention. Constant action ends in wearing out any power, produces disgust, and may end in mania. Elihu Burritt,[1] a blacksmith in New England, learned Latin, Greek, French, Spanish, German, Italian, Celtic, and Hebrew during his apprenticeship. He kept a journal of the application of his time, and he proceeds in this order of study on four successive days:—Hebrew, Celtic, forging; Hebrew, Celtic, forging; Hebrew, Celtic, French, stars, forging; Hebrew, Celtic, French, stars, forging. The forging relieved his organs of language, and saved his life.[2]

If the brain be employed too energetically, then is there a sense of discomfort and anxiety; we are, perhaps, troubled with headache, the stomach loses its tone, the mind itself becomes affected, and the whole system diseased. I have often met with Americans seeking health in Europe, and have generally found that, led on by the spirit of competition, their brains have been kept constantly burning with excitement, till their bodies have become diseased, their nervous system has lost its energy, and death seemed to be tapping them on the shoulder. They have been forced to give up business entirely, and try the effects of a voyage and continental travels. Here the nervous system, though gently excited by new objects, is allowed comparative repose. The exercise is gentle, but not too great; being much in the open air, the blood is well oxygenated, and not being

The results of too constant brain action.

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[1] This distinguished linguist and philanthropist, known as "the learned blacksmith," the advocate of "The Universal Brotherhood of Nations," and "The Ocean Penny Postage," and other philanthropic schemes, was born at New Britain, Connecticut, in 1811. He is the author of many works, the most popular being two of his earliest, "Sparks from the Anvil," and "Voice from the Forge." He has frequently visited Europe, and been welcomed in Britain and France.

[2] From MSS.

pressed for time, digestion is allowed to go on in a proper manner. In short, health is broken by violating the laws on which it depends, and restored by their observance.

Personal experience given.

I speak the more energetically, because I speak from sad experience. When young, I hardly knew that I had a brain or a stomach, much less the laws which govern their mode of activity, and, for three or four years, used to study from six in the morning till ten at night. But I dearly paid for my imprudence. I greatly injured my digestive functions, weakened my nervous system, suffered great misery, and became almost incapable of thought. I am now giving you information which, if I had possessed at fifteen years of age, would have saved much suffering and feebleness during seven years of the best part of my life, for which nothing could ever compensate.[1]

The effects of too intense cerebral activity.

It is a law of the physical organs that, if they be kept in excessive activity, that activity will not at once subside; blood continues to rush into them, and the nervous excitement to glow. This is true of the organs of the brain. Such as have been over-exercised will, after the rest have gone to sleep, keep dreaming and dreaming on the subject of the day, as though they could not find repose. On the other hand, when not sufficiently exercised, the cerebral organs seem during sleep to take on spontaneous activity, and to disport themselves. Dreams are generally the result either of the continued activity of those organs which have been over-excited, or the spontaneous activity of those which have been unemployed. When the functions have been equally and sufficiently exercised, but not overtasked, undisturbed and perfect repose is generally the result.

Absolute wakefulness is often occasioned by too intense cerebral activity. This is illustrated by the following incident:—The Rev. Mr Bedford, of Bath, told me that, before he knew Phrenology, it was his practice to set apart one day a week in his school for the recitation of all the Greek grammar which the boys under his charge had previously learned, and to stimulate them to the utmost. The morning after one recitation-day, he was told that a boy was feverish and unfit to rise. He went to inquire the cause. "Oh, sir," said the boy, "I co[illegible]t sleep all night for the Greek grammar." "But why," sai[illegible]lford, "did you not blow out the candle and shut your eyes?" "I did, sir," said the boy, "but for all that I saw the counterpane and walls and everything, covered with Greek grammar all the night." Here you see Language and Form excited to an extent which should never be allowed in education.

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[1] Ameri[illegible], edited by Boardman, pp. 320–21. See details of the system p[illegible] early education, in the "Life of George Combe" by Charles G[illegible] chaps. i., ii., and iii.

Mr G., architect in Bath, presented plans for the new House of Commons, as a competitor. Four hundred apartments needed to be provided for. The mental labour to arrange these in suitable relations to the windows in the external elevations, to convenience within, and to the stairs and passages, was immense. On going to bed, he continued to go up stairs and down stairs, and along passages, and into rooms innumerable, so that his night's fatigue became almost as great as his day's labour.[1]

School practice estimated by these principles.

The children attending this public school[2] meet at 9 A.M., and continue in school till 12. They are then sent into the play-ground for half an hour, and eat their dinner. They next resume their lessons till 3. They practise various manual exercises and evolutions calculated to circulate the blood and relieve attention; but still, this long period of continuous exertion is too great a draft on their attention. In my lectures, I endeavoured to convince my audience that man thinks by his brain, as he walks by his muscles; and that, as they would not impose a walk of six hours, with a rest of only half an hour, on young children, it is equally unwise to demand from their immature and still feeble brains that amount of exertion. The evil is both felt and acknowledged, but the reason assigned for the rule is, that if the children are once allowed to leave the school, many of them do not return till the next day; the distance to which they go, their own habits of self-will and self-indulgence, and the aversion of the parents to enforce discipline, combine to render it impossible for the teachers to secure regular attendance. This is a serious evil, and is one form in which the spirit of independence shows itself disadvantageously even at this early period of life.[3]

I delivered a lecture[4] to the assistant school teachers and other

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[1] American Lectures, edited by Boardman, p. 286.

[2] Houston Street Public School, New York, which George Combe visited when in America in 1838–40, and of which he gives an account in his work on "America," vol. i. p. 233.

[3] "America," vol. i. p. 237.

[4] In Boston, U.S., in November 1839.

The practical application of these principles.

persons interested in education, and had a large audience. The subject of the lecture was the question, Does the mind manifest a plurality of faculties, differing from each other in functions and relative strength; or is there only one general power, equally susceptible of all emotions, and equally applicable to all pursuits? I pointed out the great difference that would ensue in practical teaching, according as the one or other theory was embraced. After the lecture, the teacher of a distinguished private seminary mentioned to me that, in consequence of the views which he had derived from my lectures on Phrenology last year, he had ventilated his school, alternated the studies, and increased the intervals of relaxation, and had found the health of himself and his scholars improved, their powers of application increased, and greater enjoyment imparted to them all.[1]

3. EDUCATION SHOULD BE REGULATED ACCORDING TO NATURAL ENDOWMENT.

Education is limited by the strength of the faculties.

Men have observed, that the faculties are developed in succession; that the child is not in possession of the powers of the full-grown man; and that hence a boy may be dull at ten, who may turn out a genius at twenty years of age, when his powers are fully unfolded by time. But they do not imagine that *every* boy may be made a genius by "habits of study or of business"; nor do they believe that, after the faculties are fully developed, any individual may, if he chooses, become great in a department of philosophy or science for which he had previously no natural capacity. They have observed that cultivation strengthens powers in themselves vigorous; but they have not found that education can render eminently energetic dispositions or capacities which Nature has created feeble. They would laugh at any one who should attempt to convert an idiot into a profound philosopher. On the other hand, they have remarked that, where nature has bestowed a powerful disposition or capacity of a particular kind, it holds the predominant sway in the character during life, notwithstanding every effort to eradicate or or subdue it. They have noticed, too, that where nature has conferred, in an eminent degree, the faculties which constitute genius,[2] the individual manifests his native superiority in spite of great obstacles arising from circumstances or situation. The lives of poets, painters, and artists, in every age, bear witness to the truth of this observation.[1]

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[1] "America," vol. iii. p. 169.

[2] See George Combe's views of what constitutes Genius, in an essay on the subject, in his "Essays on Phrenology," p. 343.

Education can only regulate the faculties.

We ought to receive as axioms in education, that the predominating dispositions manifested in childhood are innate; that their existence will be permanent; and that it is our duty only to regulate them, and not to be offended at their existence.

Illustrations of this regulation.

On these principles, we ought to endeavour, if possible, to guide children by the law of kindness. If a child possess, from nature, a great endowment of Self-esteem and Firmness, he will be naturally self-willed and obstinate in his dispositions. Such a child ought never to be punished for possessing the feelings; for, as they are part of himself, they will appear to him natural and proper; and he will only rebel the more, the more we outrage them, by indulging in anger against himself. We ought, therefore, to check the manifestations of these feelings by firmness on our part, guided by affection; and, as soon as reflection begins to dawn, we ought to explain to him his natural proneness to them, and show that the feelings are in themselves excellent, if well directed; that he is an object of our warmest affection, but that we are determined to repress all irregular manifestations of them. Until the Reflecting powers are in some degree capable of acting, these explanations will not be understood; and, till then, the feelings ought to be repressed by a firm though affectionate resistance to their manifestations, on the part of the parent, but never by wrath. But, when the child begins to reflect, such explanations will have more effect than is generally believed.[2] If, again, a child possess powerful faculties of Conscientiousness, Cautiousness, and Love of Approbation, he will be naturally prone to timidity and bashfulness. The treatment proper for such an individual is not to scold and ridicule him for becoming timid; for this only produces pain, and increases the evil: but to inspire him with confidence, by kindness and affability. If another child possess powerful faculties of Self-esteem and Love of Approbation, he will be prone to magnify himself, and to assume airs of importance, which to others may appear ridiculous. The proper treatment for him is to direct these feelings to proper objects; to make him ambitious of virtue and magnanimous conduct.

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[1] "System of Phrenology," vol. i. p. 105.

[2] George Combe had a decided conviction, based on his own experience and observation, of the value and influence of such explanations to the young. See p. 110, *et seq.*

Adam Smith's opinion adduced.

I am happy to be able to adduce the authority of so accurate an observer of human nature as Dr Adam Smith, in support of these views. He clearly points out the propriety of considering the faculties as innate, and of endeavouring only to direct, and not to eradicate them. He says, "The great secret of education is to direct vanity" (and, he might have added, every feeling) "to proper objects. Never suffer your son to value himself upon trivial accomplishments. But do not always discourage his pretensions to those that are of real importance. He would not pretend to them, if he did not earnestly desire to possess them. Encourage this desire; afford him every means to facilitate the acquisition; and do not take too much offence, although he should sometimes assume the air of having attained it a little before the time."[1]

The activity of the faculties depends on the organisation.

Phrenology teaches that the power of manifesting the faculties depends on the state of the organisation. No fact is more undeniable, than that great differences exist in the power of different individuals to manifest their faculties. In early infancy, the power of manifestation is very imperfectly possessed; and, by some individuals, that power is never fully possessed at all. Such individuals are idiots, partial or total. The power of manifesting the mind varies also in health and sickness, in middle life and in old age. Now, the cause of these differences can be explained only by one or two theories. Either the Creator makes the immaterial mind itself to differ in its powers in different individuals, and at different periods of life: or the immaterial principle is the same in all individuals, and in every situation; but its powers of manifesting itself in the external world are different, in consequence of the organisation, by the instrumentality of which it acts, being different in development and activity.

Analogy, and a fair induction from the phenomena falling under our observation, lead us to conclude that these differences depend upon organisation. It is not to be presumed, without evidence, that the Creator has endowed the immaterial and immortal principle of one man with powers and capacities which he has denied to another, or that the mind itself varies in its powers with the state of

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[1] "Essays on Phrenology" (1819), p. 317. See Adam Smith's "Theory of Moral Sentiments," Part 6, s. 3.

Differences in mental manifestation depend on differences in the organs.

ealth and the age of the body ; while it consists with every day's xperience, that differences of organic constitution are the result of atural endowment and of physical events. Nature, for example, ives to one individual a power of voluntary motion far exceeding hat which she confers upon another. She makes one blind, another eaf, and denies to a third the power of speech. It is proved by his system that, in the same way, she denies to one individual the evelopment and activity of brain which she confers upon another; nd it is observed, that hence the power of manifesting the mind exernally is different in proportion.

In this way, also, does it alone appear possible to account for he transmission of mental peculiarities from parents to children. "There is, too," says Dugald Stewart, "a certain hereditary haracter (whether resulting from physical constitution, or caught rom imitation and the influence of situation), which appears remarkably in particular families. One race, for a succession of generations, is distinguished by a genius for the abstract sciences; while it is deficient in vivacity, in imagination, and in taste. Another is no less distinguished for wit, and gaiety, and fancy, while it appears incapable of patient attention, or of profound research."[1]

Educability dependent on the original constitution of the faculties;

The first circumstance which Phrenology points out as deserving of attention in attempting the cultivation of the mental powers is, that the capacity for improvement of each of the internal faculties, like that of each of the external senses, is exactly proportioned to, and is limited by, the degree of development and healthy condition of its own organ; and that the result of education is merely an increased facility of operation in that organ, and not a change in the mind itself, independent of the organisation, as is generally supposed. Whence phrenologists contend, that just as we habitually regard the power of vision, and the degree of improvement of which it is susceptible, as in exact relation to the native constitution of the eye; and the superior quickness of sight, consequent upon its judicious exercise, as always referable to a change produced, not in the unembodied principle of mind, but in the organ of vision itself: so we ought to regard each and all of the internal faculties, for example, the Reasoning power, or the faculties of Tune or of Language, and the degree of improvement of which they are susceptible, as in exact relation to the natural constitution of their respective cerebral organs; and the superior aptitude for deep thinking, for Music, or for Language, consequent upon their exercise, as the result of a change in the state of these organs, and not in the immaterial principle alone; and hence that we should, in every instance, adapt our means to the kind of faculties and organisation possessed; and that, as we cannot bend the mental character to suit any circumstances, we should therefore adapt the profession and circumstances to the character and dispositions of the individual, in so far as conduces to happiness and utility.

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[1] "Essays on Phrenology" (1819), p. 309.

Which must be exercised in accordance with this.

Hence, also, the absurdity of seeking for laws of mind as *distinct* and *separate* from the laws which regulate the union and the mutual influence of mind and body; since, so long as life remains, not a moment passes over our heads which is not pregnant with proof of their inseparable connection: and hence it is the very basis of our success, 1st, That we must employ each primitive mental faculty which we wish to cultivate directly upon its own objects, and not trust to its improvement following that of a faculty altogether different; and, 2dly, That we must proportion the degree of exercise of each to the original constitution of its own organ.[1]

Each faculty manifests itself according to its own strength.

Who that is not blinded by the mysticism of metaphysical philosophy can doubt, that the habits of the musician depend radically on a power or faculty which nature has implanted in him, which gives the desire and the power to make music? And what unhappy girl, who, without possessing any appreciable faculty of Tune, is doomed to strike the keys of a pianoforte, does not feel by experience that musical habits cannot be acquired where the natural power is wanting. Who that knows anything of science, or the arts, or of life, does not know that the enthusiasm of the philosopher, of the mechanic, of the poet, or their "habits of study," if that phrase pleases best, are founded on the antecedent possession of specific natural faculties, which give the power and the desire to perform the various acts which they respectively delight in; and that, unless these faculties be given powerfully by nature, no habits of association or of study can be formed, which will confer excellence in their several pursuits?[2]

As some faculties are possessed in greater proportion than others,

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[1] *Phrenological Journal*, vol. i. (1823–4), p. 583.

[2] "Essays on Phrenology" (1819), p. 352.

The degree of exercise regulated by the state of each faculty.

and as the most powerful are always the most capable of exercise, we must proportion the degree of exercise of each to its original constitution, so as neither to weaken it by too little action, nor to exhaust it by too much. In weak, delicate subjects, and at periods of growth, the faculties should be left a good deal to themselves, and more attention be paid to the general health and consolidation of the system. Precocious talent is frequently, from neglect of this, very soon exhausted. No general rule can be laid down, but the *same principle* applies as in the exercise of weak muscles, stomach, eyes, or any other part. In order to employ all the faculties to the best advantage, it thus becomes extremely desirable to know beforehand the proportions in which they are respectively possessed; so that no time nor labour need be lost in attempting to force those which nature has given in sparing quantity, nor mischief produced by the over-exercise, or complete neglect, of others in which she has been more liberal.

The differences in the faculties should guide our expectations as to ability.

Phrenology puts the means of obtaining this knowledge completely in our power, and it is our own fault if we do not make use of it. And, as we would never dream of giving a blind man the education of a painter, or a deaf man that of a musician, so Phrenology teaches us not to expect philosophic profundity from a person to whom nature has denied a large endowment of Causality, and therefore not to attempt to educate him for a profession in which great reasoning power is essential for success. It also teaches us not to set down as a fool or a dunce the boy whose depth of mind, depending on great Comparison and Causality, is merely hidden by the difficulty which, owing to small Language, he feels in clothing his ideas with words; for, where the reflecting power is present, it will in after life place its possessor far above his more superficial companion who excelled him at school, merely from having a much greater endowment of Language and Individuality. Phrenology thus enables us to avoid the mischief so often resulting from misdirected talents, and to select, with discrimination, the sphere in which each is fitted to move.[1]

And our treatment of the child.

It is from the difference in the original strength of the natural dispositions, that the same treatment produces different and even opposite effects upon different persons. Thus, an individual with small Conscientiousness and Benevolence, and large Acquisitiveness,

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[1] *Phrenological Journal*, vol. i. (1823–4), p. 585.

Self-esteem and Combativeness, will become worse under misfortune or injustice, and will think of revenge and of making others as miserable as himself, where another, with a different combination, would submit with serenity and resignation. But the fact that such a difference of result does take place, only shows more forcibly the necessity of knowing the functions and laws of the primitive faculties.[1]

Ex nihilo nihil fit—nature must give ability before it can be unfolded.

[illegible]

Great talents need no patrons: they unfold themselves and open the way to distinction, not only unaided, but in opposition to the most momentous obstacles.[2]

These principles illustrated by a special case.

The subject of this letter,[3] when a child, was remarkable for an active spirit, combined with much good nature, and the purest simplicity, amounting even to bluntness of manner. When sent to school to learn to read, he made the least possible progress, and afterwards, when an attempt was made to teach him Latin, he stood absolutely still. His father and mother were almost in despair, and feared that he would turn out a blockhead, fit for the mortar-tub, or the pick and shovel, but destitute of capacity for any liberal pursuit. As a last effort, they sent him to board with a celebrated teacher in the country, in the hopes that the discipline of his seminary might rouse his latent faculties, if, in fact, he possessed any. Here, however, his progress was as little flattering as before. He was made the fag of boys older and stouter than himself, or even, I suspect, of some of his own age, and, as for learning, he could not be brought to comprehend a single rule of Latin, and scarcely was able to master three sentences of French; in geography and arithmetic, he was very little more successful.

The treatment necessitated by original endowment.

In this state of matters, Dr Spurzheim arrived in this country, and a gentleman who attended his lectures imagined that the case might not be so hopeless as was conceived. He examined the boy's head, and declared that the mystery was cleared up. He found the organ f Language very decidedly deficient, and the knowing organs n general not large, while the reflecting organs were far above an verage in point of size for that period of life. Combativeness he ound rather small, while Cautiousness, Conscientiousness, Self-esteem, Love of Approbation, Firmness, Adhesiveness, Benevolence, and Ideality were all amply developed, and Destructiveness was not deficient. Tune also was large. He pointed out that the boy's proneness to active sports indicated a healthy condition of the brain; that his softness of disposition arose from deficient Combativeness, joined with large Conscientiousness, Cautiousness, Benevolence, and Love of Approbation; that his inaptitude for languages was owing to the small development of the organ connected with this faculty; and that his general dulness arose from the knowing or perceptive organs being, on the whole, but moderate in size, while those of reflection, which were decidedly large, did not come into full activity till a later period of life, and did not, till then, meet with studies and pursuits suited to their gratification. He advised, therefore, that the youth should be taken from school, and sent for three or four years to learn the trade to which it was intended to bring him up; and that, thereafter—namely, at the age of seventeen or eighteen—his education should be begun anew.

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[1] *Phrenological Journal*, vol. i. (1823–4), p. 588.

[2] "America," vol. i. p. 325–6.

[3] Dr Richard Poole, author of "Essays on Education," already mentioned, p. 102, then editor of the *Phrenological Journal*, in which this case is given, appends a note—"We are able to certify that this is a real case."

The happy results arising therefrom.

This accordingly was done, and with the happiest effects. When he had passed the age of puberty, his manner greatly changed. Instead of being the raw, blunt, timid boy, he acquired a sedate, shrewd, and intellectual expression of countenance, and, although extremely bashful and embarrassed in company, it was easy to perceive that thought was now active, and that the previous vacuity of mind, which had alarmed his relations, had entirely disappeared. His studies were now directed entirely according to his development. He was absolved at once from all drudgery with Greek and Latin, but told that, as he was destined to move in the rank of a merchant and manufacturer, it was indispensable that he should be master of his own language, and even know a little French. He, therefore, at seventeen, set about learning English grammar, and having now the aid of his reflecting powers, he apprehended, as intellectual perceptions, what as a child he was utterly incapable, owing to his deficient organ of Language, of learning by rote. He studied French at the same time, and profited, in his apprehension of the English construction, by the stronger illustrations of concord and government which that language affords. He soon succeeded so completely as to write a correct and precise English style, and he could also read a French author with facility. His other studies were geography, algebra, and mathematics, and in these also he now took pleasure, and stated distinctly that he saw the *principle* and application of them, and obtained from them food for reflection. His next course was Chemistry, Natural History, Natural Philosophy, and Anatomy, and the pleasure with which he followed the lectures on these branches of knowledge was intense, and his improvement proportionally great.[1]

The effects of parentage on original endowment.

Dr Spurzheim[2] goes a step farther back than most other writers on education; and taking observation for his guide, and finding the mental qualities and capacities of the progeny to be intimately connected with and dependent upon the bodily constitution inherited from the parent, and believing that education ought to be an *imitation of nature's own laws*, and not an invention of ours, he strenuously insists that we ought to begin at the root; and that, after having ascertained, by careful observation, what qualities of mind and body in the parents are most likely to secure for their offspring the most favourable moral, intellectual, and corporeal constitution, we ought to seek for and combine these qualities, or the nearest approximation to them which can be found. Nor is this a matter of little moment; for the more we examine nature, the more we shall be convinced that *education operates invariably in subjection to the laws of organisation*, and that it is impossible to improve the mind beyond the limits imposed upon it by its connection with its material organ, or even to alter materially such lineaments of the character as are strongly drawn by the hand of nature. It is at once an illustration of and in obedience to this law, that we find great intellectual power and favourable moral dispositions as invariably connected with a large, healthy, well-developed brain; and feeble intellect and moral deficiency as invariably the attendants of a small or very defective brain; and different or opposite dispositions and talents as invariably accompanied with very different states or configurations of brain, as if mind were merely a function of matter. Hence, as the brain is a component part of the animal system, and is subject to all the laws of living organised atter, its peculiarities, and the mental qualities consequent upon hem, are transmitted from parents to children with as much ertainty, because in obedience to the same laws, as features, noses, orms, or diseases.

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[1] *Phrenological Journal*, vol. i. (for 1823-24), p. 505. At the same place, see a letter by the subject of the above notice, containing reflections on his own faculties and their action, and expressing his obligations to Phrenology.

[2] In his great work, "A View of the Elementary Principles of Education, founded on the Study of the Nature of Man," published in 1821—a book that should be studied by every one interested in education. The above is from a review of it.

Its importance to human progress:

It has, indeed, been long known as an abstract fact in the natural history of man and animals, that the qualities of the mind as well as of the body descend from generation to generation; that children of weak and nervous parents are themselves delicate, easily agitated, and subject to convulsions; that the idiots, or Cretins of Switzerland, produce a race inferior to themselves; that the children of insane parents are generally, sooner or later, afflicted with the same disease; and that those of healthy, robust, and long-lived ancestors are in general distinguished for similar qualities. But, either from ignorance of the principle according to which it happens, and which demonstrates that it will happen again, or from an absurd fear of degradation, by admitting his own subjection to the laws which God has set over animal nature, *man* has not chosen to act upon it in improving his own species, but has married and given in marriage as if all the qualities of mind and body were directly under his own control; and, when overtaken by the consequences of his own neglect, and when vice, imbecility and disease usurp in his offspring the place of that virtue, talent, and vigour which he in vain expected to arise from good education alone, he looks upon himself as a hapless and devoted victim, who had no share in the production of his own misery, and whose only duty is to submit to the painful dispensations of a Superior Power, without making an effort to decipher and profit by the lessons which these inflictions are meant to convey. The laws of nature are ever the same; and, in the days of Moses, we find them giving rise to restrictions on the marriage of blood relations, for the very reason that they are either unfruitful or productive of degenerate offspring. If a knowledge of the operation of these laws were deeply impressed upon the mind of our youth, it is scarcely conceivable that we should so often have to lament the xtinction of whole families by consumption, the quickly-spreading miseries of insanity and imbecility, and the innumerable ills attending weak and infirm health. The chapter on this subject is one of the most valuable in Dr Spurzheim's book, and to it we must refer the reader for further details. It is written with perfect good taste, delicacy, and propriety.

In regulating marriage;

We shall only add, that among other important requisites in parents, Dr Spurzheim mentions a sound constitution, untainted

And producing a sound constitution.

with any hereditary disease, and a sound, active, and well-balanced mind, indicated by a large and well-proportioned brain, and that the qualities should be chosen, in preference, in families where they ha been the accompaniment of generations; as, where a good individual appears in a bad or indifferent race, the chance of the re-appearance in the offspring of the indifferent qualities of the stock is very great. Hence the importance attached to pedigree is, in reality, founded a law of nature; and hence, also, the value attached to it in th case of the lower animals, where each parent has been selected fo his peculiar excellencies. In man, it is by no means so sure a index of the possession of the virtues of the original stock, as th choice of partners is scarcely attended to.[1]

4. THE ORDER OF DEVELOPMENT OF THE FACULTIES.

The importance of knowing the order of development.

As some faculties arrive at maturity at a much earlier period tha others, it is extremely advantageous to know the general order o their successive development; because, by attempting to force int activity those faculties the organs of which are not yet fully developed, and by neglecting those which are, our labour is not onl entirely lost, but positive mischief produced.[2]

What is the order observed by the faculties in the course of thei successive development?

The order in which the faculties are developed.

The faculties which produce the PROPENSITIES and SENTIMENT are earliest manifested in the order of Nature, and therefore a chil is susceptible of *moral* education, before he is susceptible, in an equa degree, of intellectual education.

The other faculties susceptible of education at an early period o life are the KNOWING FACULTIES. The functions of these faculti are to become acquainted with objects and their qualities, but not t reason. Most of these faculties may be manifested in the first stage of childhood; but the REFLECTING FACULTIES, or those which trac abstract relations and consequences, cannot, in general, be so, till much later period of life. The REFLECTING FACULTIES are the la manifested in the order of time. The brain in the upper part of th forehead, which is the organ of these faculties, is not fully develope in some individuals till the age of twenty, twenty-three, or twent four. In others, however, the development is complete at an earlier period of life, but rarely, in any one, before fourteen or fifteen.

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[1] *Phrenological Journal*, vol. i. (1823-4), p. 579.

[2] *Phrenological Journal*, vol. i. (1823-4), p. 587.

At this latter period, also, the full development of the cerebellum, on which the AMATIVE PROPENSITY depends, takes place.[1] Until, therefore, the organs both of this propensity and of the reflecting faculties are fully developed, we cannot, with sufficient certainty, predicate what the natural dispositions and capacities of any individual will be. No doubt, if an individual is able to manifest powerfully the faculties of Veneration or Tune when a child, we may safely predicate that he will possess the power of manifesting these faculties during life; but, if the Reflecting faculties and Amative Propensity, when they come to be developed, prove eminently energetic, the individual may then experience greater pleasure in obscenity than in veneration, or in philosophical discussion rather than in music, although his natural capacity for veneration and music remain the same. Or, in such cases, the individual may exhibit the most absurd inconsistency of conduct,—may be at one time a saint, and at another a sinner,—at one time a philosopher, and at another a musicante,—and all with equal sincerity.[2]

The development of the faculties according to Spurzheim.

Dr Spurzheim[3] thinks, from observation, that the organs of Individuality are perhaps the earliest of the Intellectual order. Those of Form, Comparison, and Language, also appear early in life; and those of Size, Colour, Locality, Tune, Number, and Order, appear successively. Among the Propensities and Sentiments, he thinks Amativeness and Veneration are the latest. Hence, everything connected with observation, facts, history, geography, and general information, are best adapted to the youthful, and reasoning and deep reflection to the mature mind. Almost all the Sentiments come into action at a very early age, and hence they ought to be carefully cultivated from the very beginning,—according to the law of exercising each faculty upon its own objects. And, as artificial signs or language cannot be understood until the feelings or ideas which they represent are felt by the individual, we should be very careful to use such only as can be completely understood, as otherwise we run much danger of cultivating the single faculty of Language, when we believe we are cultivating all powers of the intellect. What signs could convey to the mind of one who had never felt them, the sensations expressed by the words Hunger, Thirst, Cold, Heat, Anger, or Benevolence?[1]

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[1] This is the doctrine of Phrenology, on which see George Combe's "System of Phrenology," vol. i. p. 583, and the references there; also, "The Functions of the Cerebellum," by Gall, Vimont, and Broussais, translated by George Combe (Edinburgh: Maclachlan & Stewart).

[2] "Essays on Phrenology" (1819), p. 314, 328, &c.

[3] In his "View of the Elementary Principles of Education."

The order of training consequent on this development.

Looking at the order in which the organs of the faculties are developed, and at the changes in the condition of the brain by which the exercise of mental energy is affected, we perceive that, prior to eighteen, the organs of the Propensities, Sentiments, and Perceptive or Knowing powers, such as Individuality, Language, Locality, Form, Number, and Tune, are in the highest state of maturity; and that it is not till twenty or upwards, that the Reflecting organs have attained their full size; and, farther, that it is not till after majority, that the constitution of the brain has been perfected, so as to render it capable of the most powerful manifestations. Following the order of nature, therefore, we would teach children morality and virtuous conduct, and also initiate them in all the varieties of simple knowledge, before the age of fourteen; we would send them to learn a trade, from fourteen to eighteen; and, from eighteen to twenty-two, we would combine attendance on classes of Philosophy with the practice of the duties of their profession. The details of business do not require a greater portion of understanding than is possessed from fourteen to eighteen, while the higher branches of Moral and Physical Science require a mature intellect and some experimental knowledge of the relations of society, to enable the mind to enter upon them with delight, and draw *practical* benefit from their study.

The relations of business and education.

Farther, one great cause of the education that is at present bestowed being practically lost, is the entire separation of learning from business. The boy is a scholar, till he goes to the shop or counting-house; and, when he goes there, he is a merchant or trader, and lays aside all his literature, science, and school acquirements, as obsolete exercises of boyhood. He never thinks of study as a relaxation from business, or as an agreeable recreation for leisure hours; and, until this habit shall be attained, education will not have triumphed. The great object ought to be, to keep the Intellect and higher Sentiments of the industrious classes habitually awake, and to give them an interest in every thing that is calculated to support the activity of those powers, and afford them gratification; and this will never be accomplished, till they are trained to look on themselves, not only as individuals pursuing exclusive and personal objects, but as citizens of the world, interested in the great principles which regulate the happiness or misery of the species. They must be taught to pass from the counting-house to classes of Philosophy, and from the halls of Science to the warehouse, as transitions natural, useful, and becoming; and to regard personal industry and elevated reflection as fitted each to confer grace, dignity, and usefulness on the other. There is no degradation in labour; and the highest intelligence is not incompatible with the most animated exertions in the duties of life. A conviction of the truth of this observation cannot be too widely diffused among the inhabitants of Britain, for its practical application would constitute their glory and their strength.[1]

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[1] *Phrenological Journal*, vol. i. (1823-4), p. 587.

5. THE FACULTIES ACT ONLY IN RELATION TO *THEIR OWN* OBJECTS.

The brain a congeries of organs or faculties;

The great importance of understanding whether the brain be a single organ or a congeries of organs cannot be too clearly set forth. If the mind be a simple organ, then mental exercise, of whatever kind, should be beneficial *to its whole powers*. If *it be a congeries*, we have to attend to the *particular* exercise of *each*. Suppose a trumpet be improved by practising on it, every note would be improved by improving the tone of one; but, if the instrument were a pianoforte, in which each note depends on a separate chord, it would be absurd to hope for the improvement of all the chords by improving a few merely. Some might produce the correct notes when struck, while others might produce nothing but discords; and others, being broken, might emit no sound at all.[2]

Each possessing its own specific function.

According to Phrenology, the power of feeling desires and emotions, and the power of forming ideas, depend on the faculties; and each faculty, in virtue of its constitution, gives the power of feeling emotions of a certain kind, and it owes its functions neither to the human will nor to any fortuitous circumstances, but to nature alone. Hence, powerful faculties confer the capacity of feeling strongly, and of thinking deeply. The mind does not manifest one faculty alone, equally capable of feeling in every way, and of forming ideas of every kind; but it manifests several faculties, each independent and distinct in its functions.[1]

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[1] *Phrenological Journal*, vol. ii. (for 1824–5), p. 442.

[2] "American Lectures," edited by Boardman, p. 333.

Individual development regulated by the faculties possessed.

Each faculty has its specific functions from nature, and he is a genius whose Knowing and Reflecting faculties perform their functions with eminent effect. Hence the greatest genius is substantially the same being as the dullest mortal; he has only the same faculties in a higher degree of perfection. Hence, too, an individual may be, in one respect, a great genius, and, in another respect, very deficient in natural ability. The individual who has the faculty of Tune eminently powerful may be a genius in music, and in nothing else. He who has the faculty of Language eminently bestowed may be a super-eminent linguist, and excel in no other accomplishment. He who has the faculty of Constructiveness and Form eminently powerful may be an eminent mechanician, and excel in no other art. He who has the faculties of Comparison and Causality powerful may be a profound philosopher, and no poet. And he who is highly gifted with Ideality may have the rapturous inspirations of the poet, without possessing the deep-penetrating and logical powers of the philosopher.[2]

Each faculty requires specific training.

It is a very common mistake in our schools, and in the received systems of education, to suppose that, by cultivating one faculty, we necessarily exercise the others; that, by studying languages or Mathematics, for instance, we necessarily cultivate the Reasoning powers, or that, by cultivating the latter, we necessarily improve the Moral Sentiments. Phrenology puts an end to this delusion, by showing, that each faculty depends for its power of acting upon the state of its own organ; and that thus whole pages may be learned by rote, in virtue of the activity of the organ and faculty of Language alone, without exciting in any degree those of Causality or Comparison, upon which reflection depends. It shows that Mathematics, being a science of relative properties and numbers, exercises almost exclusively the organs and faculties of Locality, Form, Size, Individuality, Comparison, and Number, while it leaves Causality almost inactive. It shows that the memory of facts and details depends on a good endowment of Individuality, and, consequently, that the mere acquisition of knowledge does not exercise the Reasoning powers or Moral Sentiments. It shows that the latter, as well as the Intellect, depend upon particular organs; that each, in order to be cultivated, must be excited directly by *its own* object; and, in short, that it would be as philosophical to attempt to educate sight by listening to the sounds of a violin, or hearing by reading a treatise on Acoustics, or touch by smelling a nosegay, as to attempt to improve the Reasoning powers by learning a collection of words, or the Moral Sentiments by objects exclusively addressed to the Intellect.

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[1] "Essays on Phrenology" (1819), p. 349.

[2] "Essays on Phrenology" (1819), p. 350.

Illustrations of this specific training.

Hence, when we wish to cultivate the Reasoning powers, let us employ them directly in tracing the relation of cause and effect, and in the discovery of general principles. When we mean to cultivate the Knowing faculties, let us exercise Number, for example, in the study of arithmetic and algebra; Language, in the acquisition of the dead and living languages, and in the structure of their sentences; Locality and Individuality, in the study of geography and the natural history of different countries of the world. And again, when we intend to cultivate the Moral sentiments, let us exercise Conscientiousness in the habitual practice and example of even-handed justice, instead of thinking to enforce it by precepts adapted to the organs of intellect alone; let us excite the activity of Benevolence in our children, by practising it towards others, rather than by bare words, with which our conduct is at variance; and let us not complain of a want of respect in our children, depending on inactive Veneration, when we ourselves habitually treat others as if it were a sin to be respectful. In short, let us always exercise *directly* the faculty we wish to cultivate, for it is only by so doing, that we shall at all succeed.[1]

The faculties become active only by their own objects.

Each faculty may be roused into activity by the *presentment of its appropriate objects.* Thus, Benevolence is roused by a scene of distress; Philoprogenitiveness, by the sight of children; Ideality, by whatever is beautiful. When we become acquainted with this law, we obtain to a great extent the mastery over the activity of the faculties. But the Propensities and Sentiments may, in the next place, be roused by *words* which convey such ideas as stimulate them to activity. Thus, the description of a beautiful scene may produce activity in Ideality. This last is, however, the least effective stimulus. To present a scene of distress appeals much more powerfully to Benevolence than to describe one. Suppose a shipwreck be vividly described, it may greatly excite the feelings; but if a shipwreck be witnessed, there can be no doubt of its exciting them ten times more.

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[1] *Phrenological Journal*, vol. i. (1823–4), p. 584.

The effects of their over-stimulus.

Sometimes the excitement produced by a powerful external stimulus is such as to disorder the faculties. A gentleman was sailing in his own small pleasure yacht down the Clyde, when a sudden flaw of wind came from a gap in the mountains and upset the vessel in which he was, throwing it on its beam-ends. He and his companions held on, in the expectation of assistance, but in half an hour another flaw came and righted the vessel. They were all saved, and immediately sailed to Belfast to attend a regatta. He said that, while in the water, he was not conscious of great perturbation or excitement; the blue and seemingly unfathomable Clyde lay beneath and around them, smooth and calm. On his return, however, he applied to Dr Combe on account of a singular malady. Since the accident in the Clyde, he had been subject to sudden fits of fear and apprehension, to starting and perturbation, without any adequate external cause, which was doubtless a diseased condition of the organ of Cautiousness. He was under treatment six or eight months before he got rid of the affection.

Their agreeable exercise always gives pleasure.

"It seems," says David Hume, "an unaccountable pleasure which the spectators of a well-written tragedy receive from sorrow, terror, anxiety, and other passions that are in themselves disagreeable and uneasy. The more they are touched and affected, the more are they delighted with the spectacle. The whole art of the poet is employed in rousing and supporting the compassion and indignation, the anxiety and resentment, of his audience. They are pleased in proportion as they are affected, and never are so happy as when they employ tears, sobs, and cries to give vent to their sorrow, and relieve their hearts, swollen with the tenderest sympathy and compassion."[1]

This enigma is explained by the remarks before made on the activity of the respective faculties, occasioned by the presentation of the appropriate objects. All happiness consists in the agreeable excitement of our faculties, and activity is the very essence of gratification. Now, on the stage, the words and natural language of emotion are so well imitated as to arouse the feelings with much more energy than words alone could do. In the play of "Pizarro," for instance, when the child is introduced, its aspect and situation excite Philoprogenitiveness; its danger arouses Cautiousness, producing fear for its safety. When Rollo saves it, Philoprogenitiveness is delighted, and Benevolence gratified.[1]

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[1] Hume's Essays, Part First, Essay xxii., Of Tragedy.

These principles applied to school studies.

In New England, I visited a common school, the head-master of which told me, that he devoted one half of his whole hours of teaching to arithmetic and mathematics, because he had discovered that pupils who excelled in those branches soon became proficients in every other, such as grammar, geography, and repetitions. No phrenologist could have held such views, because he must have known that arithmetic and mathematics depend on different organs from those which take cognizance of language, grammar, and general reasoning. I observed that the organs on which arithmetic and mathematics depend predominated over the other intellectual organs in this person's own head, in consequence of which he could teach these branches with more ease and success, and his common sense led him to conclude that all his pupils were similarly constituted to himself. When teachers rely solely on "common sense" and their own experience, they act merely on the suggestions of their strongest Propensities, Sentiments, and Intellectual faculties, whatever these may be, without reference to the differences which exist between their minds and those of their pupils.[2]

The faculties that are naturally and that are artificially cultivated.

Other conditions being equal, the human faculties act with a degree of energy corresponding to the size of their organs; and the organs of the animal Propensities are generally large. They are, therefore, naturally powerful; and not only so, but the circumstances of life present to them constant and powerful excitements. They are thus *trained* from infancy by our position and the influence of surrounding objects to activity, without the need of artificial culture. This is well ordered by the Creator, because the activity of the Propensities is necessary to our subsistence, preservation, and defence, as individuals and as domestic beings. But the Moral and Intellectual organs, in most individuals, when combined, although equal or superior in size to those of the Propensities, stand more in need of artificial cultivation. Their function is to control and direct the animal feelings and desires, and they need to be instructed and strengthened themselves to fit them to accomplish this duty.

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[1] "American Lectures," edited by Boardman, p. 278.

[2] "America," vol. iii. p. 176–7.

The training of the Intellectual faculties;

Instruction should be communicated by directly addressing and exercising the Intellectual faculties, and training them to deal with *their own* objects. Children should be taught to examine every object minutely, and to mark its hardness or softness, its solidity, its form, size, weight, colour, the number of its parts, its place of growth or production, its liability to suffer change from the influence of other objects, and its powers of producing changes in them. They should be taught to try experiments and note the consequences, and be trained to perceive and comprehend that life is a series of processes, each of which has an inevitable consequence of good or evil attached to it, which they cannot alter or evade, but to which they may, within certain limits, accommodate their own conduct and position. This would constitute training of the Intellectual faculties.

Of the Moral and Religious faculties.

The Moral and Religious faculties, also, are best trained by presenting to them *their natural* objects, and engaging them in active emotion. When a child is led to relieve suffering, to do a kind or courteous action, its Benevolence is brought into activity. When it is engaged in contemplation of God's power, wisdom, and goodness, and taught to yield obedience to His will, and to obey His laws, its Veneration is cultivated. When it is called on to scrutinise and try its own actions and those of others by the standard of justice, and to pronounce a sentence of approval or condemnation, its Conscientiousness is strengthened. When beautiful objects and dulcet sounds are presented, and the child is taught to reproduce the like, its faculties of Ideality, Time, and Tune are trained, and so forth. It is only by a thorough enlightenment of the Intellect, and a practical training of the Moral and Religious Sentiments that these faculties can be enabled steadily and in all emergencies to control and direct the animal Propensities.

It is in society that the objects and excitements necessary for training the Moral and Religious faculties are chiefly found. We cannot be benevolent unless there be animated beings to benefit by our kindness; nor meritoriously just, unless in presence of individuals whose rights conflict with our own desires. The playground and the domestic social circles, therefore, are the spheres in which our Moral and Religious principles should be reduced to practice; and it is only by the constant exercise of them there, that they can be trained and invigorated to accomplish the objects for which they were bestowed.[1]

On 15th May, 1839, I was introduced to James J. Mapes, Esq., a

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[1] "Popular Education," pp. 43-4.

These principles illustrated by a special case.

scientific gentleman, residing in 461 Broadway, New York. His daughter fell from a window, when she was about four years of age; her head struck against the iron bar which extended from the railing to the wall, and the skull was extensively fractured, but without rupturing the pia mater, or doing any serious injury to the brain. She was attended by Dr Mott; a part of the skull was removed from the superior-posterior portion of the head, the integuments were drawn over the wound, and the child recovered. The part of the skull removed was that which covers the organs of Self-esteem and Love of Approbation. She did not wear any plate over the wound; but the hair over it, like that on the other parts of the head, was fine, and was kept short.

When I saw the child, she was eight years of age, healthy and intelligent; and no external trace of the injury was visible to the eye. The form of her head was that of a superior female child: it was long, and moderately broad at the base; Secretiveness, Love of Approbation, Self-esteem, Cautiousness, and Firmness, were all large; Benevolence and Veneration were well developed, and the anterior lobe was large. I saw the pieces of skull which had been removed. They might be three and a half by three inches in superficial extent. The skull had not been replaced. On applying my hand, I felt the brain rising and falling with the respiration, and distinctly ascertained that the organs of Self-esteem and Love of Approbation were denuded of the skull; also a small part of Conscientiousness, and the posterior margin of Firmness. Her father mentioned that, before the accident, he considered her rather dull; but her mother (whom also I had the pleasure of seeing) did not concur in this opinion; both, however, agreed that, since her recovery, she had been acute, and fully equal to children of her own age in point of ability.

The cerebral effects of appeals to different faculties.

With the permission of her father and mother, I kept my hand for some minutes gently pressing on the external integuments over the site of the injury, and distinctly felt a considerable movement, a swelling up and pulsation,[1] in the organs of Self-esteem; and the same movements, but in a less degree, in those of Love of Approbation. When I began to talk to the child, she was shy and bashful, and at first would scarcely speak.[2] The vivid movements in Self-

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[1] I consider the swelling up and pulsation to have arisen from an increased flow of blood into the convolutions, as the accompaniment of their increased activity.—(G. C.)

[2] Bashfulness is the result of the fear of not acquitting one's self to advantage, and of thereby compromising one's personal dignity.—(G. C.)

The cerebral effects of appeals to different faculties.

esteem indicated that, amidst her extreme bashfulness, this organ was active. As I continued to converse with her, and succeeded in putting her at ease, the movements in Self-esteem decreased, while those in Love of Approbation continued. I spoke to her about her lessons and attainments, not in flattering terms, but with the design of exciting Self-esteem, and the movements increased. Again I soothed her, and they diminished. This was repeated, and the same results ensued. Her father gave her several questions in mental arithmetic to solve; she was puzzled, and made an intellectual effort, and the peculiar movements in the organs of Self-esteem and Love of Approbation ceased; only a gentle and equal pulsation was felt. She solved the question, and we praised her: the peculiar movements of Self-esteem and Love of Approbation returned and increased. This experiment was repeated at least four times, with the same results. I took out a piece of paper and began to write down notes, in pencil, of what had occurred. She looked at my writing; and as all attention was now withdrawn from herself, and her mind was occupied intellectually in observing what I was doing, I placed my hand on the integuments, and only the gentle and regular pulsations of the arterial system were perceptible.

This case is replete with instruction in practical education. It tends, so far as one example can go, to prove that, by exercising the Intellectual faculties, we do not necessarily excite the Feelings; and also that each Feeling must be addressed *by objects related to itself*, before it can be called into action.[1]

6. THE FACULTIES *WILL* ACT; AND THIS ACCORDING TO THEIR STRENGTH AND ACTIVITY.

Strong faculties should be directed.

We ought never to treat a child with severity, because he is prone to indulge the particular faculties which nature has made most powerful in his mind. Our first care ought to be, to discover what powers are particularly energetic in his constitution; and our second, to learn how to direct them. The existence of a powerful innate faculty is discovered, not only by perceiving the organ large, but by studying the actions of the individual.

If the faculty be powerful, it will manifest itself in actions. The child who has a strong faculty for Music, will make music of his own accord. The child who has a strong faculty of Form, will draw from a spontaneous impulse. The child who has a strong faculty of Benevolence, will show it by the humaneness of his disposition, his aversion to cruelty, and his readiness to bestow. The child who has a strong faculty of Acquisitiveness, will show it by the selfishness of his disposition, by his propensity to acquire, and by never giving. The child who has a strong faculty of Destructiveness, will show it by his propensity to break and destroy; and if Benevolence be weak, by his disposition to be cruel, and by his delight in tormenting and killing animals. The child who has a strong faculty of the Love of Approbation, will show it by his propensity to boasting, and by his sense of shame. The child who has a strong faculty of Cautiousness, will show it by his proneness to the emotion of fear. The individual who has the Reflecting faculties strong, will show them by the consecutiveness of his discourse, the depth of his penetration, and the scope of his invention.[1]

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[1] "Phrenology," vol. i. p. 365–7. See also an account of the case, by George Combe, in "America," vol. ii. 279.

Some years ago, a similar case was reported by Mr John Grattan, of Belfast, in the *Phrenological Journal*, vol. ix. p. 473, and vol. x. p. 11.—(G. C.)

They must manifest themselves.

When the faculties are powerfully active by natural energy, the conceptions are both rapid and strong; when they are naturally weak and languid, the conceptions are slow, laborious, and feeble. Some men talk of "the fatigue, exercise, and anxiety of mind which an author has to endure," and say that they "appear greater than those which attend military stations."[2] But this is the case only when a man becomes an author, whom nature never destined for one. When the faculties are languid and feeble, we cannot by an effort of the will rouse them to form rapid and forcible conceptions, or to feel powerful emotions. We may tug at the chain of association, but brilliant conceptions will not appear, because such conceptions cannot be formed by misty and expiring faculties. But, as the faculties owe their constitution to nature, and as they perform their functions in consequence of their constitution, they will, when naturally powerful, produce powerful thoughts, with as little pain to the possessor as will be felt by the high spirited race-horse when he gallops over the plain. Instead of mental exertion being to such men a pain, it is their delight. Ask any man who ever invented in the arts and sciences, and he will tell you that the act of invention was the most delightful of his life; he will tell you that he was able to invent only when the strong impulse came from within, only

The effects of differences in their strength.

The ease and pleasure of exercising powerful faculties.

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[1] "Essays on Phrenology" (1819), p. 316.

[2] Duncan "On Genius," published in 1814, chap. x. p. 129.

when his faculties answered to the summons of his will; that, although there were long periods when the god of inspiration seemed to have forsaken him, yet, when "the great burst of inspiration came," the ideas poured like a torrent upon his mind, and no pleasure equalled that of giving scope to his mental powers, when thus spontaneously energetic. The works of Shakespeare, Scott, Byron, and such mighty men, show that the efforts which produced them were made with the ease of might, not with the toil of impotency.[1]

How the faculties are trained by their surroundings;

If, in each of two individuals, the organs of Propensity, Sentiment, and Intellect are equally balanced, the general conduct of one may be vicious, and that of another moral and religious. In such a case, it will be found that the circumstances of the former have been well calculated to rouse and invigorate the animal Propensities, and allow the moral Sentiments to lie dormant, while the circumstances of the other have been directly the reverse. The *native power* may be equal in the Propensities and Sentiments; but the circumstances have given an acquired ascendency to the class of feelings most strenuously cultivated.

By education.

Suppose that two individuals possess an organisation exactly similar, but that one is highly educated, and the other left entirely to the impulses of nature; the former will manifest his faculties with higher *energy* than the latter; and hence it is argued that size is not, in all cases, a measure of power. Here, however, the requisite of *cæteris paribus* does not hold. An important condition is altered, and the phrenologist uniformly allows for the effects of education, before drawing positive conclusions.[2] It may be supposed that, if exercise thus increases power, it is impossible to draw the line of distinction between energy derived from this cause, and that which proceeds from size of the organs; and that hence the real effects of size can never be determined.

The size of the organs is the limit of power and development.

The answer to this objection is, that education may cause the faculties to manifest themselves with the highest degree of energy *which the size of the organs will permit*, but that size fixes a limit which education cannot surpass. Dennis, we may presume, received some improvement from education, but it did not render him equal to Pope, much less to Shakespeare or Milton; therefore, if we take two individuals whose brains are equally healthy, but whose organs differ in size, and educate them alike, the advantages in power and attainment will be greater, in proportion to the size, in him who has the larger brain. Thus the objection ends in this,—that if we compare brains in opposite conditions, we may be led into error—which is granted; but this is not in opposition to the doctrine that, *cæteris paribus*, power is in proportion to size. Finally, extreme deficiency in size produces incapacity for education, as in idiots; while extreme development, if healthy, as in Shakespeare, Franklin, Burns, Ferguson, and Mozart, anticipates its effects in so far that the individuals educate themselves.

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[1] "Essays on Phrenology" (1819), p. 354.

[2] See "Transactions of the Edinburgh Phrenol. Soc." p. 308.—(G. C.)

In saying, then, that, *cæteris paribus*, size is a measure of power, phrenologists demand no concessions which are not made to physiologists in general, among whom, in this as in other instances, they rank themselves.

Mental power, action, and activity distinguished.

There is a great distinction between *power* and *activity* of mind; and it is important to keep this difference in view. *Power*, strictly speaking, is the *capability* of thinking, feeling, or perceiving, however small in amount that capability may be; and, in this case, it is synonymous with faculty. *Action* is the *exercise of power;* while *activity* denotes *the quickness*, great or small, *with which the action is performed*, and also the degree of *proneness to act*. This distinction between power, action, and activity of the mental faculties is widely recognised by describers of human nature. "Nature," says Lord Bacon, "will be buried a great time, and yet revive upon the occasion or temptation; like as it was with Æsop's damsel, turned from a cat to a woman, who sat demurely at the board's end till a mouse ran before her." In short, it is plain that we may have the *capability* of feeling an emotion—as anger, fear, or pity—and that yet this power may be inactive, insomuch that, at any particular time, these emotions may be totally absent from the mind; and it is no less plain, that we may have the *capability* of seeing, tasting, calculating, reasoning, and composing music without actually performing these operations. It is equally easy to distinguish *activity* from *action* and *power*. When power is exercised, the action may be performed with very different degrees of rapidity. Two individuals may each be solving a problem in arithmetic, but one may do so with far greater quickness than the other; in other words, his faculty of Number may act more rapidly. He who solves abstruse problems slowly, manifests much power with little activity; while he who can quickly solve easy problems, and them alone, has much activity with little power. The calculator who works difficult problems with great speed, manifests in a high degree both power and activity of the faculty of Number.

Strength and quickness illustrated.

In physics, strength is quite distinguishable from quickness. The balance-wheel of a watch moves with much rapidity, but so slight is its impetus that a hair would suffice to stop it; the beam of a steam-engine progresses slowly and massively through space, but its energy is prodigiously great. In muscular action, these qualities are recognised, with equal facility, as different. The greyhound bounds over hill and dale with animated agility; but a slight obstacle would counterbalance his momentum, and arrest his progress. The elephant, on the other hand, rolls slowly and heavily along; but the impetus of his motion would sweep away an impediment sufficient to resist fifty greyhounds at the summit of their speed.

Mental energy and vivacity distinguished.

In mental manifestations (considered apart from organisation), the distinction between energy and vivacity is equally palpable. On the stage, Mrs Siddons and Mr John Kemble were remarkable for the solemn deliberation of their manner, both in declamation and action, and yet they were splendidly gifted with energy. They carried captive at once the sympathies and the understanding of the audience, and made every man feel his faculties expanding, and his whole mind becoming greater, under the influence of their power. Other performers, again, are remarkable for agility of action and elocution, who, nevertheless, are felt to be feeble and ineffective in rousing an audience to emotion. *Vivacity* is their distinguishing attribute, with an absence of *vigour*. At the bar, in the pulpit, and in the senate, the same distinction prevails. Many members of the learned professions display great fluency of elocution and felicity of illustration, surprising us with the quickness of their parts, who, nevertheless, are felt to be neither impressive nor profound. They exhibit acuteness without depth, and ingenuity without comprehensiveness of understanding. This also proceeds from vivacity with little energy. There are other public speakers, again, who open heavily in debate—their faculties acting slowly, but deeply, like the first heave of a mountain-wave. Their words fall like minute-guns upon the ear, and, to the superficial, they appear about to terminate ere they have begun their efforts. But even their first accent is one of power—it rouses and arrests attention; their very pauses are expressive, and indicate gathering energy to be embodied in the sentence that is to come. When fairly animated, they are impetuous as the torrent, brilliant as the lightning's beam, and overwhelm and ake possession of feebler minds, impressing them irresistibly with a feeling of gigantic power. The distinction between vivacity and energy is well illustrated by Cowper, in one of his letters. "The mind and body," says he, "have in this respect a striking resemblance to each other. In childhood, they are both nimble, but not strong; they can skip and frisk about with wonderful agility, but hard labour spoils them both. In maturer years, they become less active but more vigorous, more capable of fixed application, and can make themselves sport with that which, a little earlier, would have affected them with intolerable fatigue."

Causes that influence the activity of the faculties.

As a general rule, the largest organs in each head have naturally the greatest, and the smallest the least, tendency to act, and to perform their functions with rapidity. The Temperaments also indicate the amount of this tendency. The Nervous is the most vivacious, next the Sanguine, then the Bilious, while the Lymphatic is characterised by proneness to inaction. In a Lymphatic brain, great size may be present, and few manifestations occur through sluggishness; but, if a strong external stimulus be presented, energy often appears. If the brain be very small, no degree of stimulus, either external or internal, will cause great power to be manifested.

A certain combination of organs—namely, Combativeness, Destructiveness, Hope, Firmness, Acquisitiveness, and Love of Approbation, all large—is favourable to general vivacity of mind; and another combination — namely, Combativeness, Destructiveness, Hope, Firmness, and Acquisitiveness, small or moderate, with Veneration and Benevolence large—is frequently attended with sluggishness of the mental character; but the activity of the whole brain is constitutionally greater in some individuals than in others. It may even happen that, in the same individual, one organ is naturally more active than another, without reference to size; just as the optic nerve is sometimes more irritable than the auditory: but this is by no means a common occurrence. Exercise greatly increases activity as well as power, and hence arise the benefits of education.

Power not the most valuable mental quality.

The doctrine that size is a measure of power, is not to be held as implying that much power is the only, or even the most valuable uality, which a mind, in all circumstances, can possess. To drag rtillery over a mountain, or a ponderous waggon through the streets f London, we would prefer an elephant, or a horse of great size and uscular power; while, for graceful motion, agility and nimbleness, e would select an Arabian palfrey. In like manner, to lead men

Power not the most valuable mental quality.

in gigantic and difficult enterprises—to command by native greatness, in perilous times, when law is trampled under foot—to call forth the energies of a people, and direct them against a tyrant at home, or an alliance of tyrants abroad—to stamp the impress of a single mind upon a nation—to infuse strength into thoughts, and depth into feelings, which shall command the homage of enlightened men in every age—in short, to be a Bruce, Bonaparte, Luther, Knox, Demosthenes, Shakespeare, Milton, or Cromwell—a large brain is indispensably requisite. But to display skill, enterprise, and fidelity in the various professions of civil life—to cultivate, with success, the less arduous branches of Philosophy—to excel in acuteness, taste, and felicity of expression—to acquire extensive erudition and refined manners—a brain of a moderate size is perhaps more suitable than one that is very large; for, wherever the energy is intense, it is rare that delicacy, refinement, and taste are present in an equal degree. Individuals possessing moderate-sized brains easily find their proper sphere, and enjoy in it scope for all their abilities. In ordinary circumstances, they distinguish themselves; but they sink when difficulties accumulate around them. Persons with large brains, on the other hand, do not readily attain their appropriate place: common occurrences do not rouse or call them forth; and, while unknown, they are not trusted with great undertakings. Often, therefore, such men pine and die in obscurity. When, however, they attain their proper element, they are conscious of greatness, and glory in the expansion of their powers. Their mental energies rise in proportion to the obstacles to be surmounted, and blaze forth in all the magnificence of self-sustaining energetic genius, on occasions when feebler minds would sink in despair.[1]

A large brain necessary for great power.

The men who are able, without feeling encumbered, to attend to their private duties, and, at the same time, carry a load of public business on their minds, owe this quality to great size in the brain, with an active temperament, and large knowing organs. Those who, having small brains, find their whole powers absorbed and exhausted by their particular occupations, wonder at such men, and cannot comprehend either their motives or the means by which they accomplish so much. It is power which distinguishes them; so that duties which to others would prove oppressive, press lightly on them, or afford them only amusement.

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[1] "System of Phrenology," vol. i. pp. 164–71.

Mr Joseph Hume, M.P., is a striking illustration of this doctrine. He possesses moderate organs of Causality, little Wit, less Ideality, and no greater endowment of Language; yet even his opponents allow him to manifest great force of character, with a power of application and perseverance which to ordinary minds is incomprehensible. If we look at the large brain indicated in his cast, and attend to the combination of organs which it displays, we shall perceive the source of his weight. Dr Spurzheim also showed great force of character, and his brain was large. This quality in him was the source of the intense and long-enduring interest which he created and supported in the minds of those who came in contact with him. He was calm, mild, and unobtrusive, yet there was a degree of depth and power about him, which made lasting impressions on those who listened to his public discourses, or conversed with him in private.

Examples of this: In great men;

In examining the heads of criminals in jail, I have found the most daring, desperate, and energetic to possess large brains. When great size and an unfavourable combination occur together, the officers of justice are reduced to despair in attempting to correct the offender. They feel a strength of character which they cannot subdue, and an evil bent which they cannot direct. The result generally is a report from the police that the individual is incorrigible; his first serious offence is prosecuted to extremity, and he is transported or hanged, for the sake of protecting society from farther mischief.

In criminals;

In professional pursuits, also, the men who are indisputably paramount to their fellows, not merely in cleverness, but in depth and force of character, have large heads; and this holds, not only in the learned professions, but in mercantile avocations. I have observed that individuals who, born in indigence, have acquired wealth by conducting great and extensive establishments, have uniformly brains above an average size; and that mercantile travellers who succeed in procuring orders and pushing a trade amidst a keen and arduous competition, are distinguished by the same quality. Such men make an impression, and act with a confidence of power, which gives effect to all they say or do. In a school, if the children care nothing for the master, and treat him with disrespect, and if he fail, after using every severity, to maintain discipline and subordination, he will be found to have a small brain. In the domestic circle, if the mistress of a family, while in good health, is easily overcome, annoyed and oppressed with the cares and duties of her household, the origin of the evil will be found in too small a head.

In common life;

In the church.

In the church, the effects of size are equally conspicuous. A preacher with a large brain, the Moral and Intellectual regions predominating, is felt by his flock to possess weight, and they submit willingly to be led and taught by him, while they treat with indifference the feebleness that accompanies a little head. If, as occasionally happens, a preacher possess an excellent combination, that is, the organs of the Sentiments and Intellect large in proportion to those of the animal Propensities, he may be acute, amiable, sensible, and interesting; but, if the general size of his brain be under an average, he will not be impressive and commanding.[1]

Causes which influence mental activity.

The chief circumstances which influence the *activity* of the faculties may be comprised under four heads—

1. Original Constitution;
2. Physical Education;
3. The mode in which each faculty is exercised;
4. Their mutual influence in exciting or repressing each other.[2]

7. THE FACULTIES CAN BE TRAINED ONLY BY THE DIRECT EXERCISE OF EACH, ACCORDING TO THE LAWS OF ITS CONSTITUTION.

Exercise necessary for each faculty.

If the savage desires to increase the powers of hearing of his son, to train him to detect the approach of an enemy while distant, does he merely talk to him about listening? No; he places him with his ear to the ground, and bids him try to discover and distinguish the minutest vibrations of the earth, and to judge by them of the number and direction of the footsteps which occasion them. To train his sight, he employs him in observing minutely the most distant objects. To exercise his powers of walking, running, and leaping, he exercises his muscles in performing feats of agility.

In training the higher faculties of the mind, we must imitate the savage in educating the senses. We must exercise them on their appropriate objects. What are these objects? Here the most stupendous view of God's wisdom and goodness breaks upon our understanding, and captivates our imagination. He has made eyes to see, and created a sun as the illuminating orb to render our eyes useful. He has given us ears, and established vibrations in elastic bodies to suit the structure of our ears. But he has done greatly more.

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[1] "System of Phrenology," vol. ii. p. 286.

[2] *Phrenological Journal*, vol. i. (1823–4), p. 579.

He has created an external world adapted in the most admirable manner to the human faculties, and placed it at our disposal, as a theatre of exertion, and a storehouse of materials for our use.[1]

The astonishing effects of exercise.

Practice has an astonishing effect in giving acuteness to the perception of differences in the appearance of objects. A schoolboy or labourer will confound manuscripts of different aspects, while an experienced copyist finds no difficulty in ascribing each of a hundred pages, written by as many individuals, to its appropriate penman. When there is a question of forgery in a court of law, the judge remits to an engraver to report whether or not the signature is genuine, because it is known that the familiarity of engravers with the minute forms of written characters enables them to discriminate points of identity and difference which would escape the notice of ordinary observers. How frequently, moreover, do strangers mistake one member of a family for another, although the real difference of features is so obvious to the remaining brothers and sisters that they are puzzled to discover any resemblance whatever! How easily does the experienced physician distinguish two diseases, by the similarity of whose symptoms a novice would be at once misled! And with what facility does a skilful painter discriminate a copy from an original! It was only after a continued and attentive study of Raphael's pictures that Sir Joshua Reynolds was able to perceive their excellencies. "Nor does painting," he adds, "in this respect differ from other arts. A just poetical taste, and the acquisition of a nice discriminative musical ear, are equally the work of time. Even the eye, however perfect in itself, is often unable to distinguish between the brilliancy of two diamonds: the experienced jeweller will be amazed at this blindness, though his own powers of discrimination were acquired by slow and scarcely perceptible degrees."[2]

Instructing and training the faculties distinguished.

There is a vast difference between Instruction and Training, and education should embrace both. Instruction means communicating knowledge, while Training implies the repetition of certain modes of action in the mind and body until they have become habits. It is a law of our constitution that any organ, when accustomed to repeat frequently its action, acquires additional strength and facility in doing so, and the force and advantages of habit arise from this law. If we merely tell a pupil how to point his toes and place his feet, and what series of movements to execute, this is *instructing* him in dancing; but it is not *training* him to the practice of the art. To accomplish the latter object, we must teach him actively to dance; and the more frequently we cause him to repeat certain movements, short of occasioning fatigue, the more expert will he become in performing them. In like manner, mere information concerning natural objects, their agencies, and relations, is instruction; while accustoming children to observe, to discriminate, to arrange, to operate, and to reason for themselves, is *training* their understandings.

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[1] From Speech at Paisley, to Working Classes, Sept. 29, 1851; from *North British Daily Mail.*

[2] "System of Phrenology," vol. i. p. 155.

This illustrated: In Religious education;

Teaching a child to repeat the precepts and doctrines of the New Testament is *instructing* him in religion and morality; but he is not *trained* to religion and morality, until he shall have been accustomed to practise these precepts in his daily conduct. The Scripture says, "*Train* up a child in the way in which he should go, and when he is old he will not depart from it;" but it does not promise the same result from merely *instructing* him. In this respect, Scripture and nature completely agree.[1]

Suppose a lady be told that, to produce certain notes, she must strike such and such keys. You might continue the instruction for years without enabling her to play a tune, if she did not practise—if her fingers were not trained. So you might instruct a child in the precepts of the New Testament, but if he be not trained to religion and morality, if he be not accustomed to practise these precepts, instruction will be of little use. We must not be content with telling; we must act, and induce him to act. In receiving, the mind is passive; in training, it is active—and there is a vast difference between these two states.

In Home education;

We may take a very common illustration of the effects of Training. Suppose a child to live in a community where Combativeness, Destructiveness, and Self-esteem are particularly active. He will be the object of their manifestations. Resentment will be excited, and in him the same faculties be roused. Hence will result coarse, cold, harsh, and vulgar manners. On the contrary, if a child be educated in a family where every human being is treated with respect—where Benevolence, Veneration, Conscientiousness, and Love of Approbation are all active—wherever he goes, he will at once be recognised as a well-bred gentleman and practical christian.

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[1] "Popular Education," p. 41.

In regulating the Propensities;

One object in education is to diminish the activity of some of the Propensities, as pride, acquisitiveness, and quarrelsomeness. Now, a very common method is to *tell* the child to do so and so, and, if it refuse or neglect, to discharge upon it a storm of words or blows. The child is overcome by superior brute force, but injured in the process. The true plan is to allay the excitement of the Propensities, and to excite the Moral Sentiments by mildness but firmness. Force addresses itself to fear alone; Benevolence, Conscientiousness, and Veneration are not at all exercised. Follow the child into its room, and there see the effect of such discipline. Has it compunctious visitings? Is it grieving over its faults? No, it is burning with rage and the desire of revenge; it longs to be a man, that it may escape from what it considers tyranny. People often forget, in the business of education, the gigantic power of man's moral nature, before which the Propensities cower and quail.[1]

In training Philoprogenitiveness.

If you want to train Philoprogenitiveness, or the love of children, what is the only rational course? Not to *tell* a girl to love children; that would fall inefficaciously on the mind. No; present a child to her attention; let her be induced to nurse it, to watch over it, to play with it. This causes a rush of blood to the organ, which stimulates it, improves its tone, and favours its growth. Laura Bridgman, who was deaf, dumb, and blind, had her Philoprogenitiveness trained by means of a doll. You might as well expect to increase the power, activity, or size of a muscle by instructing a youth that exercise is a duty, without taking care that he puts his muscles into activity, as expect the improvement of a cerebral organ under like circumstances. The foregoing remarks are not theoretical but practical, and founded on observation.[2]

These principles illustrated by Habit:

Every voluntary action is a manifestation of some one or more faculties of the mind. Habit is defined to be "a power in a man of doing anything, acquired by frequently doing it." Now, before it can be done at all, the organ on which it depends must be possessed; and the larger the organ, *cæteris paribus*, the greater will be the facility with which the individual will do the thing at first, and learn to repeat it afterwards. George Bidder, for example, the princi- ustrated bit.

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[1] "American Lectures," edited by Boardman, p. 338.

[2] "American Lectures," edited by Boardman, p. 340; and MSS.

celebrated mental calculator, acquired the habit of solving, in an incredibly short time, without the aid of notation, extensive and intricate arithmetical problems. Before he could begin to do such a thing, the organ of Number was indispensable. Possessing it largely, he made great and rapid acquisitions of power in calculation, and, at seven years of age, established the *habit* which seemed so surprising. Other individuals are to be found endowed with a small organ of Number, who, although forced by circumstances to practise the use of figures, never succeed in acquiring a habit of solving, with facility and success, even the simplest arithmetical questions. This illustration may be applied to painting, poetry, music, and mathematics. Before the habit of practising these branches of art and science can be acquired, the organs on which the talents depend must be largely possessed; and being so, the habits result spontaneously from exercising the organs. As quarrelling and fighting are manifestations of Combativeness and Destructiveness, a boy will the more readily acquire the habit of acting in this manner, the larger these organs are in his brain, and the less controlled by others. If these organs be small, or if the higher organs decidedly predominate, the boy will be naturally indisposed to quarrelling, and will acquire the habit of it with great difficulty, wherever he may be placed. He may repel unjust aggressions made upon him, but he will not be the promoter of mischief, or a leader in the broils of his companions. Many boys can never acquire the habit of quarrelling, even though urged to it by circumstances.[1]

as ced rcise;

Exercise strengthens the *organs*, and causes them to act with greater facility, and, in this way, the *real* effects of habit, which are important, may be accounted for; but the organ must possess considerable natural power and activity, to render it susceptible of the exercise by which habit is formed. The practice of debate by barristers gives them great facility in delivering extemporaneous harangues, compared with that enjoyed by persons whose avocations never lead them to make speeches; and this facility may be said to be acquired by the habit of speaking: but it will always bear a proportion to the original endowment of the faculties; and we shall find that, while habit gives to one individual great fluency and copiousness of diction, it often leaves another in much poverty of speech and embarrassment of utterance. The powers of both will be greatly superior to what they would have been without the practice of speaking; but disparity in eloquence will continue to characterise them, owing to differences in their original constitution.

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[1] See these views illustrated in the case of John Linn, *Phrenological Journal*, vol x. p. 207.—(G. C.).

By organisation.

The metaphysicians attribute many important mental phenomena to the effects of habit, and yet they altogether neglect the influence of organisation on the mind. According to our views, it is the organ which acquires strength, activity, and superior facility in performing its functions, by being properly exercised, just as the fingers of the musician acquire facility of motion, by the practice of playing. The effects of habit in giving readiness and ease are thus accounted for in a manner that is at least intelligible and supported by analogy. The metaphysicians, on the other hand, must imagine that it is the immaterial principle itself which is improved by exercise, and gains strength by habit,—a notion which is altogether inconceivable, and in opposition to the attributes of a purely spiritual being. Farther, Phrenology teaches that the mental organs are distinct, and that it is quite possible to exercise one organ, and leave another unemployed. This doctrine explains why, by practising music, we do not acquire the habit of speaking or writing with facility; and why, by studying Mathematics, we do not acquire the habit of reasoning deeply in Moral or Political Science. Those physiologists, however, who hold the brain to be a single organ, and every part of it to be engaged in every act of the mind, ought to show how it happens, that exercising it in one way does not improve it in all; or, to use an illustration applied by Dr Johnson to genius, why the man who is able to walk east can possibly fail in the power of walking west. If the organs by means of which he walks east be *different* from those by which he walks west, no difficulty will occur; but if they be *the same*, some portion of ingenuity on the part of the disciples of the old school will be necessary to account for the supposed deficiency.[1]

The conditions of the development of the faculties:

It is an important question whether the *size* of the organs may be increased by exercise, and diminished by inactivity. The following considerations may serve to guide us in forming an opinion on this subject:—

(1.) Natural endowment;

First, It is a general law in Physiology that any part of the body, when called into vivid activity not transgressing the bounds of health, attracts towards itself an increased supply of arterial blood and of nervous influence. The effect of these is to increase its tone and also its size. But there are limits to these effects. The blacksmith's arm does not, by exercise, continue to grow indefinitely. It attains a limit which it never passes. To the growth of all our organs, nature appears to fix boundaries which they cannot exceed, except by diseased action. A man of a naturally slender frame may be rendered larger and more robust by exercise than he would have been without it; but he cannot be augmented into an equality in dimensions and strength with a man who was naturally large and strong, and whose qualities have been fostered and developed by equally judicious treatment. The same rule holds in regard to the brain. In every individual, nature appears to have set limits to the size of every organ, within which limits judicious exercise will add to its bulk and power. But I have not observed that when, in any individual, the brain, or any single organ, is naturally small, exercise can render it equal in magnitude to another brain or organ naturally large, and treated in the same way.

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[1] "System of Phrenology," vol. ii. 274–7, where the Phrenological view of Habit is fully explained. See the usual text-books on Mental Philosophy, for the common view; also a very good chapter on the subject in Dr Carpenter's "Mental Physiology," chap. viii. (London: Keegan Paul & Co.)

Exercise
sary ;

Secondly, It is a general law of animal nature that an organ, if not duly exercised, attracts a small supply of arterial blood and nervous influence towards it, and, in consequence, it either does not fully develop itself, or it diminishes in size and tone, and its functional power decreases in proportion. This rule applies in regard to every organ of the brain.

The limits
owth.

Thirdly, The cerebral organs increase spontaneously in size, in most individuals up to twenty-one or twenty-two, in many to twenty-eight, and, according to Dr Gall, in some instances up even to forty years of age. I have seen organs manifestly increase between twenty and twenty-eight, without any special effort being made to develop them, by exercising the faculties; and the mental powers evolved themselves, uncalled for, in correspondence with the increase of size in the organs. In observing cases of increase of growth, accompanied by exercise, within these ages, it is difficult to determine how far the growth is the spontaneous act of nature, and how far exercise has *caused* it. That exercise *favoured* it, and that inaction might have *retarded* or perhaps *prevented* it, is highly probable—nay, almost certain; but I have not seen facts sufficient to warrant me to affirm that, in every case, every organ may be fostered into large or even into average dimensions by exercise, although it be naturally small. On the contrary, I know facts that show that nature sets limits to organs (in some instances very narrow limits) which cannot be surpassed.

This exemplified.

My own organ of Number is very defective in size. I exerised it regularly, and up to the limits of its powers, during orty years, commencing when I was eight years of age, and t has never grown, nor has the function increased in power. I never could, and cannot now, add, divide, multiply, or subtract numbers, with even average accuracy and facility.[1] I had a sister who, during seven years in youth, exercised her organ of Tune, which was naturally small, with the most exemplary assiduity and perseverance, believing that nothing is denied to well-directed industry, but it never grew, and she could not, at the end of that time, play even common airs on the pianoforte with facility or expression. She had good organs of Language, Individuality, and Reflection, and she acquired the French and Italian languages, and a correct and copious English style, within a shorter time, and with one-tenth part of the labour. Both in her and me, the temperament was nervous-bilious. I could cite many other examples. The Ethiopian cannot change his skin, nor the leopard his spots; and my present impression is, that human efforts can develop the brain only up to certain definite limits established, in the case of every individual, by nature.[2]

The pleasure from each faculty dependent on its own activity.

The principle is universal, and admits of no exception, that want of power and activity in any faculty is accompanied by deprivation of the pleasures attendant on its vivacious exercise. He who is so deficient in the organ of Tune that he cannot distinguish melody, is cut off from a source of gratification enjoyed by those who possess that organ in a state of vigour and high cultivation; and the same principle holds good in the case of every organ and faculty. Criminals and profligates of every description, therefore, from the very constitution of their nature, are excluded from great enjoyments attendant n virtue; and this is the *first* natural punishment to which they re inevitably liable. Persons, also, who are ignorant of the constiution of their own minds, and the relations of them to external bjects, not only suffer many direct evils on this account, but, hrough the consequent inactivity of their faculties, are, besides, eprived of many exalted enjoyments. The works of creation and he character of the Deity are the legitimate objects of contemplation

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[1] See additional details as to George Combe's want of Number, in Part Third, hap. iv. 1.

[2] "System of Phrenology," vol. ii. 291-3.

And of their harmonious development.

Education operates in giving direction to the faculties—

1*st*, By enlightening the understanding.

2*d*, By establishing combinations in activity. In warlike ages, Self-esteem and Love of Approbation are trained to act with Combativeness and Destructiveness, and then *glory* is desired; in commercial ages, with Acquisitiveness, and then wealth is desired; in aristocratical circles, with ill-directed Veneration and Ideality, and then high rank, titles, and splendour are desired. To arrive at the truly Christian character, we must carry them a step higher, and establish a combination between them and Intellect, Veneration, Benevolence, and Conscientiousness.

3*d*, In order to direct the faculties, *words* are not sufficient; there is a necessity for the knowledge of *things*.

4*th*, In order to direct the faculties, give the child a general view of life; keep his corporeal organs healthy; gratify all the mental faculties within their legitimate sphere of indulgence, the moral and intellectual holding the supremacy. A knowledge of the corporeal organs, of the mental faculties and their spheres of action, and of external objects is indispensable to this.[1]

Their co-activity explained.

One great object of education should be to train certain organs which conduce to a common end, in such a way as to establish among them a community of activity. Thus, to give the talent for music, Tune, Time, Weight, Ideality, and Imitation should be trained to work together. They may be all large, yet, without training, the efforts to make music will be imperfect. Suppose one of you who had never attempted to speak in public, should rise to address this audience from the place where I now stand: he would make a confused and incoherent speech, even if Language, Individuality, Eventuality, Comparison, and Causality were large, because they would not act simultaneously. But let him practice, let him train those organs to combined activity, and he will become an eloquent speaker. So, in playing upon the pianoforte or harp, the muscles at first will not act well; but, by practice, their activity becomes almost wonderful. Training makes the distinction between men on being introduced into a drawing-room. The most intellectual and amiable may feel very much embarrassed and distressed on seeing so many dressed people; but, if he repeat his visits, he may become the pride and ornament of a society of which, at first, he seemed a hopeless member.[1]

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[1] From MSS.

The co-operation of the Feelings and Intellect necessary.

A leading aim in education is to direct all the faculties to proper objects. The preliminary step to this end is to bring the Feelings and Intellect into mutual and habitual co-operation. You will understand what I mean by a very simple elucidation. Suppose that, without assigning any good reason, I were at this moment to propose to adjourn the next lecture to six o'clock in the evening, or some very inconvenient hour, and were to put the question to you in this manner, Let those who object, hold up their hands; there would be many who had the strongest objections who would not hold up their hands. But, nevertheless, they would go away discontented, and speak in no very measured terms of the impropriety of the proposal. Now, this conduct is characteristic of the Sentiments and Intellect not acting in co-operation. A mind properly trained ought to have definite principles of action, of generosity, of justice, of selfishness—no matter, for the illustration, which. On the proposal being made, the Intellect should at once be directed to the Sentiments. Shall I consent, through Benevolence? Shall I resist, through Conscientiousness, being otherwise engaged? Or shall I resist, through a justifiable Self-esteem, not being able to attend at the hour proposed, and not wishing to lose a lecture? Then instantly the Intellect ought to direct Firmness and Combativeness to raise the hand. The mind then acts from principle, and feels satisfied on subsequent reflection.

The want of this co-operation illustrated.

But mark the present state of matters. Habitual actions are not performed on any principle; and very little co-operation exists between the Sentiments and Intellect. The proposal is made—Benevolence prompts to agree; Self-esteem, in the form of personal convenience, prompts not to agree; Love of Approbation and Cautiousness produce the fear of being thought unaccommodating; Secretiveness produces a closeness of mind that is afraid to speak out; and Combativeness and Firmness are never called on to act at all. The individual, under this conflict of feeling, sits still, feels an internal agitation, does not raise his hand, yet does not keep it down on principle; and the proposal is carried, just because nobody's mind is made up on it, and every one goes away discontented with himself and with the adjournment. Very few blame *themselves* for the result, but they are very eloquent in vituperation of the proposal itself, and him who made it.

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[1] American Lectures, edited by Boardman, p. 341.

The effects of co-operation explained.

I select this example for the sake of illustration merely, but you must all have felt how often the counterpart occurs in real life. Persons come to you and solicit; you do not like to deny, and yet you do not accede with cordial satisfaction. Now, this is just the result of the Propensities, Sentiments, and Intellect not acting together,—of your having no satisfactory knowledge of yourselves or of others. Phrenology aids astonishingly in overcoming this painful condition. If one makes a proposal, the practical phrenologist recognises, with almost intuitive rapidity, what faculty in him dictates it. If it springs from Benevolence, Conscientiousness, or any legitimate motive, he appeals to his own Benevolence, Conscientiousness, and Intellect, and decides at once whether he can comply. If he cannot, and if he knows that Conscientiousness is strong in him who solicits, that person will not be offended by a refusal founded on legitimate reasons; and he has no hesitation in refusing, explaining at the same time the real cause why he declines. If the proposal is founded on mere unwarrantable selfishness, then the phrenologist knows that it is mere weakness to yield to so low an impulse; he refuses at once, because Conscientiousness and Benevolence and Intellect all proclaim, that unprincipled and interested persons ought not to be permitted to avail themselves of our feelings to make unjustifiable exactions. In how many instances, however, does Love of Approbation prevent us from saying Nay, when every other sentiment of the mind rebels against saying Yes!

A good rule to supply its want.

An excellent friend of mind, who has strongly felt the pain of rejecting improper solicitations, adopts an excellent plan in his own practice, in consideration of the same weakness in others. When about to ask any of his friends to join in an undertaking, or to lend their aid to any particular object, he prefaces his communication by saying:—"Now, I come to make a request, but I do not wish your answer just now. I call only to give you the explanations. Consider what I shall say, and to-morrow drop me a note of your resolution. Now, mind, I do not wish you to tell me at present what you think of it." He then states what he wishes done, and goes away. The effect of this is that the Intellect gets time to act on the proposal, undisturbed by Cautiousness, Love of Approbation, &c.; and the individual, if he wishes to decline, in the course of twenty-four hours, musters courage to put on paper some sort of excuse which he could never have uttered with his lips. Whereas, if he approves, he does so deliberately and heartily, and has no subsequent repentance. This ought always to be the rule in matters of importance; but, at present, it would be requisite, even in very trival affairs, and will continue to be so, till the faculties be properly disciplined and enlightened.

This want taken advantage of.

This weakness is taken advantage of by designing persons. I have occasionally heard it said, "Propose such a thing, and they will not like to refuse it. You may carry your point in this way, when you would never get them to give an explicit consent." This is unjust, and I should like to see society so trained that they would decide on principle, and act fearlessly on the decision, without hesitation.

The effects of this want: In infant training;

The principle here noticed might be illustrated by an indefinite number of examples. How often does a child ask some indulgence which Intellect and Conscientiousness intimate to be improper; and yet, by his importunity, by his addressing forcibly Philoprogenitiveness, how often does he prevail! Or suppose that some project to be attended with expense is suggested, and that Intellect and the Moral Sentiments clearly intimate that it is not proper to be followed out, but that Love of Approbation or Self-esteem desire it vehemently for their gratification; how frequently will these lower Feelings fairly carry off the victory, and determine the conduct!

In school studies;

One of the worst effects of teaching children words and precepts, instead of giving them ideas and training them to act, has been a kind of habitual disseveration of the Intellect from the Sentiments and Propensities. At school, for example, we were all taught to read about a great many objects and places and events, of which no rational conception was furnished to us; and we were taught precepts which we never saw exemplified in practice. We were told to be meek, and merciful, and pious, and were treated harshly and imperiously, and without deference or respect to our feelings. The consequence has been the establishment of a habit of hearing words or reading words, as mere sounds, as if they had no reference to practice whatever. We hear sermons, lectures, and speeches, and read books, and how little do they stir up the Propensities and Sentiments so as to lead us to action! Nay, this has generated the habit also of preaching, and lecturing, and writing books, without due reference to practice; for it is undeniable that often these are vague, general, and inconclusive, leaving no distinct or intelligible perception in the understanding, and having no reference to the affairs of life.

In social life.

Another evil of this method is that it weakens the Intellect, and benumbs the Sentiments. Persons who sit and listen to discussions as mere sounds imbibe confused ideas, and are sadly deficient in the philosophic principles of religion, morality, and reason; and, in consequence, are incapable, not only of aiding with effective advice in any affair of importance, but of taking an interest in the discussion of its nature, principles, or results. They arrive at a kind of mechanical habit of acting on a compound of impressions, consisting of prejudices, errors, good feelings, and sound ideas, strangely confused and mingled together: and they are insusceptible of improvement, after this condition is attained; for, being unaccustomed to deal with principles, they have no criterion of their own on which they can rely to distinguish right from wrong, and think their only safety is in following out a course to which they have got accustomed, and the effects of which they have experienced.

The mode of producing this co-operation, in teaching.

The practice of treating words as mere signs would reduce language to its proper level. Distinct conceptions alone of objects, relations, and feelings which exist, and of principles founded in reason, would be communicated as knowledge. In every thing that was taught, also, reference would constantly be had to the Propensities and Sentiments, or, in other words, our knowledge would have practical utility as its object. The faculties, by this course of training, would be preserved in habitual vivacity, and accustomed to act and react on each other in harmony, and, to a good old age, the capacity for improvement would be preserved.

This principle of establishing combinations in activity among the faculties may be further illustrated. Suppose, for example, that an individual possesses the organs of Language, Individuality, Comparison, and Causality, all fairly developed: here are all the elements of a public speaker. But, if they have never been accustomed to act simultaneously, to co-operate and assist each other, and the individual rises up for the first time to speak in public, although Causality may act, Language probably is inactive, and he has ideas, but no words; or if Language is excited, Individuality is in fault, and the facts cannot be commanded. If the organs have been trained to act together, then language, facts, and reason present themselves, blended in due proportions, and an elegant action is produced.

Education is of great service in producing this harmonious action.[1]

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[1] From MSS.

The co-operation of the intellectual and moral faculties.

As no part of the system should be cultivated at the expense of the rest, nor the mind at the expense of the bodily health; so neither should the intellect be cultivated at the expense of the moral. Each should be duly exercised, and made to harmonise as much as possible with the other; and, with this view, we ought carefully to distinguish between the *nature* of the faculties and their *particular applications.* Thus, one manner of satisfying an inclination may be innocent in itself, but, if granted to a faculty already too active, it becomes blamable. Thus, praise is in itself a very good thing, but if we remark a child who possesses the faculty of Love of Approbation in an uncommon degree, let us beware of flattering and praising him for the beauty of his face, his voice, or his figure. By doing so, we prepare future misery for him. We complain of a child who is passionate, and yet we are foolish enough to encourage him to vent his anger upon a chair or a stone.[1]

How faculties excite each other to co-operate.

Dr Spurzheim,[2] in the 4th chapter, treats of the mutual influence of the faculties in exciting each other to activity. Thus, from the influence of Philoprogenitiveness upon Combativeness, females defend their young with more energy and resolution than anything else; and thus Acquisitiveness often calls Cautiousness and Secretiveness into action to gain its object. Thus also Love of Approbation excites the Intellectual faculties, as is daily seen in schools and in society. The Intellectual faculties also excite and assist each other. Thus, a person with moderate Language and large Locality, in trying to commit to memory, will often succeed by mentally dividing the page into compartments, and fixing a few lines in each. It thus becomes an object of some consequence to ascertain the mental constitution of the individual, because, as the faculties most largely possessed always tend to act along with each other, one may be used, when necessary, as a means of exciting another. This knowledge lies at the bottom of the doctrine of motives: for one will exert himself for praise, which another despises; a second will act from the hope of gratifying his large Acquisitiveness; a third, from an innate sense of duty; and a fourth, from excessive constitutional activity making rest painful to him. The insight into human nature which Phrenology bestows upon its disciples thus supplies them with an engine of immense power, in the education and management of youth.[1]

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[1] *Phrenological Journal*, vol. i. (1823-4), p. 588.

[2] In his "View of the Elementary Principles of Education," of which this is part of a review.

How the faculties mutually influence each other.

Every individual above idiocy possesses all the organs; but they are combined in different degrees of relative size in different persons, and the manifestations of each organ are modified, in some degree, by the influence of those with which it is combined. The effect of combination, however, is not to *change* the functions of any organ, but only to modify the *manner* in which it is manifested, or the acts in which it seeks gratification. If, for example, the organ of Tune be equally large in two individuals,—but if, in one of them, the organs of the animal Propensities predominate, he may manifest it in producing bacchanalian songs; while, if in the other the organs of the Moral Sentiments predominate, he may employ it in composing sacred melodies. In both instances, Tune produces music, the only effect of the combination being to alter its direction. This illustration is applicable to all the faculties; and shows that, although the functions of some parts of the brain are still unascertained, the discovery of them cannot alter the functions of those already known.[2]

Strong faculties tend to co-operate.

Where several organs are pre-eminently large in the same individual, they have a natural tendency to combine in activity, and to prompt him to a line of conduct calculated to gratify them all. Where, however, all or the greater part of the organs are possessed in nearly equal proportions, important practical effects may be produced, by establishing combinations in *activity* among particular organs or groups of organs. For example, if Individuality, Eventuality, Comparison, Causality, Language, and Concentrativeness be all large; they will naturally tend to act together, and the result of their combined activity will be a talent for public speaking or literary composition. If Language be small, it will be extremely difficult to establish such a combination in activity, and this talent will not readily be evolved. But if two individuals possess this group of organs *of equal and of average size*, and if we train one of them to the bar, and the other to a mechanical employment; the result will be an acquired facility in writing and debate in the former, which will be wanting in the latter. In the one, these organs will have been trained to act together, and to co-operate in producing the effect described; whereas, in the other, a different combination in activity may have been established among the intellectual organs, giving pre-eminence to a different talent.

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[1] *Phrenological Journal*, vol i. (1823–4), p. 589.

[2] "System of Phrenology," vol. ii. pp. 295–6.

But they must be exercised in combination.

On the same principle, if a person having a favourable endowment of the organs of Propensity, Sentiment, and Intellect, were introduced, for the first time, into higher society than that to which he had been accustomed, he might lose for a moment the command of his faculties, and exhibit awkwardness and embarrassment. This would arise from irregular and inharmonious action in the different organs: Veneration, powerfully excited, would prompt him to manifest profound respect; Love of Approbation would inspire him with a desire to acquit himself to advantage; Cautiousness would produce alarm, lest he should fail in accomplishing this end; Self-Esteem would feel compromised by the consciousness of embarrassment stealing on the mind; and the Intellect, distracted by these conflicting emotions, might be unable to regulate the conduct with propriety. On the other hand, when familiarised with the situation, the Sentiments would subside into a state of less energetic and more harmonious action; the Intellect, assuming the supremacy, would regulate and direct the Feelings; and then the individual might become a pattern of refined manners and the ornament of the circle in which he had at first made an awkward *début*.

The importance of this principle in education.

It is in virtue of this principle that education produces its most important effects. If, for instance, we select two individuals, in each of whom all the organs are developed in an average degree, and educate one of them among persons of sordid and mercenary dispositions,—Acquisitiveness and Self-Esteem would in him be cultivated into a high degree of activity, and self-interest and personal aggrandisement would be viewed as the great objects of his life. If Love of Approbation were trained into combined activity with these faculties, he would desire distinction in wealth or power; if Veneration were trained to act in concert with them, it would take the direction of admiring the rich and great; and Conscientiousness, not being predominantly vigorous, would only intimate that such pursuits were unworthy, without possessing the power by itself of overcoming or controlling the whole combination against it. If the other individual, possessing the same development, were trained in the society of moral and religious persons, in whose habitual conduct the practice of benevolence and justice towards men, and of

rence of God, was regarded as the leading object of human
tence,—the Love of Approbation, acting with this combination,
ld desire esteem for honourable and virtuous actions; and wealth
ld be viewed as the means of procuring gratification to these
ier powers, but not as itself an object of paramount importance.
l the practical conduct of the two individuals might be very
rent, in consequence of this difference of training, although
r organs were equal in size.

It explains cases of change of character.

he change of character exhibited by some individuals appears to
eferable to new combinations in activity. It occurs generally in
i in whom the organs of both the Propensities and Sentiments
large. In youth, the Propensities take the lead, and Intellect,
ng in combination with them, produces sensual and immoral con-
t. At a more advanced age, when the Propensities have become
energetic, the individual may be placed in circumstances which
erfully excite his Sentiments. The Intellect will then act in
bination with them, new interests will be felt, and higher views
luty and enjoyment arise. Life may thenceforward be regulated
reason and moral feeling, sensual gratifications may be shunned
resisted, and the individual may appear like a different being.
igious impressions are frequently the causes which give com-
ncement to this reformation; and this is natural, because reli-
n addresses the most powerful motives to the higher faculties. I
e observed, however, that individuals in whom the organs of the
ral and Intellectual faculties decidedly predominate, do not
ibit this change, because at no period of their life have they been
kingly vicious. Neither do men in whom these organs are very
icient, and the organs of the Propensities very large, permanently
lergo it; because their minds are like the stony ground men-
ned in Scripture, on which the good seed fell, but on which it
ld not take root, owing to the want of soil.

It consists with the influence of size in organs.

The principle now under discussion is not inconsistent with the
luence of size, because it is only in individuals in whom the organs
nearly on an equality in point of size, that great effects can be
duced by combinations in activity. In such cases, the phrenolo-
t, in estimating the effects of size, always inquires into the educa-
n bestowed.[1]

As it is desirable, in every system of education, to leave none of

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[1] "System of Phrenology," vol. ii. p. 311.

That education is best which trains most faculties.

the faculties inactive, so that system is to be preferred which is calculated to exercise the greatest number of them. And, in this respect, the Lancasterian, or Mutual Instruction system,[1] undoubtedly excels, as it brings into action many of the higher Sentiments, as well as the Intellectual powers, which either slumbered or became absolutely vitiated under the old practice. It excites a greater degree of attention in the pupil, by addressing itself directly to Individuality, Comparison, &c., at the same time as to Language. And, by making the pupils teach each other and judge of each other's conduct, it calls into direct action the faculties of Conscientiousness, Benevolence, and Veneration, and gives the most virtuous direction to those of Self-esteem and Love of Approbation, so often perverted to the production of envy, jealousy, and pride. It thus encourages the timid, and morally represses the overbearing and selfish, and produces that rational feeling of superiority founded on superior conduct. The emulation which it excites is of a far more generous kind than that of the old school. In the one, the child is led to conceive himself as one of many, and an equal among equals; in the other, as concentrated in self, and in opposition to both master and scholars.[2]

The effects of untrained faculties: In the labourer;

A course of phrenological lectures would necessarily contain an exposition of the nature of the human mind, calculated to strike the lower orders with instant and irresistible conviction of the superiority of educated over uneducated men. In revealing to them the various Propensities, Sentiments, and Intellectual powers with which the Creator has endowed them, the effects of their combinations in different degrees of relative strength, their uses and abuses, such lectures would present them with a powerful picture of the real condition of an untutored mind. This would show that the uninstructed labourer is not a pure and virtuous character because he is ignorant; that he is ignorant of good, but not of evil; that his animal Propensities inspire his mind with an instinctive relish for vicious pleasures; that he is a creature of impulse, seeking his whole happiness from the enjoyment of the moment, and incapable of acting habitually on the dictates of reason and his true interest; and that he must cultivate his higher Sentiments and Intellect, and act in conformity to the laws of the moral and physical world, under pain of ceaseless evil, as the natural and unavoidable consequence of opposition to the institutions of the Creator.[1]

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[1] This is the system of Mutual Instruction by means of the pupils themselves, introduced and developed by Bell and Lancaster at the beginning of the century, variously known as the Monitorial, Mutual Instruction, and Lancasterian system. Both its recommendations and defects have since then been more fully elucidated. It has had a great influence on modern education, and, in this country, has issued in the present Pupil Teacher system. See an account and criticism of it in Gill's "Systems of Education" (London: Longmans); Kiddle & Schem's "Cyclopædia of Education," *s.v.*, Monitorial System, &c.; and Dr Donaldson's "Lectures on Education" (Edinburgh: A. & C. Black): it is described also in Leitch's "Practical Educationists" (Glasgow: MacLehose). George Combe's criticism was written in 1824, shortly after its introduction, when it was an immense improvement on the past, and when it was achieving remarkable results.

[2] *Phrenological Journal*, vol. i. (1823–4), p. 587. See an able analysis, by James Simpson, of the mental faculties exercised and trained by Wilderspin's Infant System, in an article, "The Phrenological Analysis of Infant Education on Mr Wilderspin's System," in the *Phrenological Journal*, vol. vi. (1829-30), p. 418. George Combe everywhere recommended Wilderspin's system for its admirable training power.

In the unenlightened rich man;

Let us try to comprehend the condition of a rich citizen unenlightened by education. Wealth conduces *directly* to the gratification of only *two* faculties—Acquisitiveness and Self-esteem; *indirectly*, it furnishes the means of enjoyment to all the other powers. The lower Propensities are naturally energetic, and, in ordinary men, require no cultivation to stimulate them to activity. But not so with the Intellectual faculties and higher Sentiments. These require training and culture to make them yield their fruits; but then their products, compared with those of the Propensities, are like nectar contrasted with muddy water.

The rich citizen, then, with a *plum* in his pocket, and no education in his head, is in possession of the means of gratification for his Acquisitiveness and Self-esteem. He may hug his purse, and dote upon its ample contents; he may defy the world, and look down with contempt on all who have fewer pounds than himself. Further, he has the means of procuring all manner of animal enjoyment, and, added to this, every sort of finery in house, equipage, and dress, that may excite the admiration of vulgar minds, and thereby gratify his Love of Approbation. He has also the faculties fitted to enjoy all these pleasures; and, to this extent, we allow him full gratification. But as money cannot confer an exercised Intellect and refined Sentiments, he is excluded from all the higher enjoyments of our nature. He may purchase books, but he is incapable of reading them with relish; he may expend thousands on pictures or statuary, but he can extract no delight from their beauties; he may fill his apartments with the finest instruments and the most admirable compositions in music, but he cannot command his soul to thrill at their sounds; he may aspire to the society of the enlightened, whose conversation soothes and purifies the feelings while it stimulates and enlivens the understanding, but he has neither ideas nor sentiments in common with them.

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[1] *Phrenological Journal*, vol. ii. (for 1824–5), p. 446.

In the intercourse of the uneducated.

Two uneducated men of different occupations, and living in distant parts of the country, when they meet, have no subject of conversation in which both can feel an interest, and can extract no pleasure from each other's society. The knowledge of each is confined to the character of his neighbours, and the practice of his own trade; and he is dead to every feeling and idea that, by dealing with the great and permanent interests of mankind, is calculated to rouse the Sentiments and elevate the Understanding. The uneducated man, in short, must live and die in the society of those who talk of stock, and trade, and prices, and farms, and profits, and eating and drinking, and dress, and everything that is corporeal; and although all these, as ministering servants to the gratification of the higher powers, are excellent in themselves, yet, when they constitute the *alpha* and *omega* of life, the sum and substance to which all our thoughts and aspirations are dedicated and confined, they are felt to be poor and paltry, just because they yield no satisfaction to the Moral and Intellectual faculties.[1]

Effects of the harmonious training of the faculties: (1.) In the culture of Judgment;

On what does Judgment depend? On a favourable development of all the faculties. When a man possesses such a combination, each faculty throws in its own suggestion, and there is that harmonious balance of activity by which all the faculties are brought to perform their functions in the best manner. If any one be very small, there will be a defect in the Judgment in regard to feelings and things to which it is related. If any be excessively large, there will be exaggerated emotion or perception in that department. A man in whom all are favourably developed, acts under the control of the Moral sentiments and Intellect, but he has the well-spring of *all* the faculties to a proper degree.

Sound Judgment is feeling rightly and perceiving correctly. The Reflective faculties are the judges, but they depend on the other faculties for correct data. Hence a man may have a high development of the Reflecting organs, and yet, in a certain sense, be a man of bad Judgment. We have an instance of this in Lord Bacon.[1]

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[1] *Phrenological Journal*, vol. ii. (for 1824-5), p. 436.

(2.) Of Common Sense;

Common Sense is said to be the rarest of all sense. This is true; and the reason is, that for one man who has a good balance of the cerebral regions, the Moral Sentiments predominating, ten have a large development of particular groups of organs. We have men of high intellectual powers who are lacking in sound Judgment—of high genius, who are practical fools. I have often heard it discussed in my own country, and sometimes in America, whether Washington was really a great man, seeing that he did not, in any particular direction, show very extraordinary power. Now, I have long been accustomed to adduce him as an illustration of that harmonious development which gives sound Judgment, sagacity, and practical good sense. In what I now say, I appeal not to your national pride, as I have said the same things in my own country for years. Washington was one of the greatest men that ever lived. His temperament seems to have been sanguine-bilious; his head large and well-balanced in every part—the Moral Sentiments and Intellect reigning supreme. He had a constancy which no difficulties could overcome—an honesty of purpose and ardour of patriotism which no temptation could swerve nor opposition subdue. He always regarded his country before himself. In him there was no quality of mind deficient—no quality in excess; no false lights, and no deficient lights. He therefore gave to everything, its due weight, and no more. He was dignified, courteous, and just; brave, cautious, politic; quick to perceive, and prompt to judge; always acting at the right time, and in the right manner. Those who say that Washington was not a great man, can merely mean that he displayed no one quality in excess—that he played off no coruscations; but he had that sterling worth—that daily beauty in the life—that force of character—that grandeur and elevation of the whole man, which render him far more great and estimable, in my opinion, than the poet, the painter, or the orator.[2]

Illustrated by Washington;

Good Taste, too, results from equable development. It is, in fact,

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[1] See George Combe's ideas on Judgment, in his "System of Phrenology," vol. ii. p. 173, &c.; also a good chapter on the subject, in its common acceptation, in Currie's "Common School Education" (Edinburgh: T. Laurie); and a lecture "On the Education of the Judgment," by Faraday, in "Modern Culture," edited by Dr Youmans (London: Macmillan).

[2] See a good chapter on Judgment itself, and as exercised in "Common Sense," in Dr Carpenter's "Mental Physiology," pp. 261 and 471 (London: Keegan Paul & Co.)

(3.) Of Good Taste.

sound Judgment in matters which do not rise to the importance of morals. Bad Taste arises from the excessive manifestations of one or more faculties. Thus the scene in "Don Juan," in which Juan and his companions are represented as devouring his tutor, is a predominating and disgusting manifestation of Destructiveness, and is consequently execrable in point of taste.[1]

9. HOW TO STIMULATE THE FACULTIES, AND STRENGTHEN THEIR ACTIVITY.

(1.) *By Presenting Their Own objects.*

Faculties are stimulated by their own objects.

To quicken faculties too slow, we must stimulate them. The stimulus to a mental organ is either direct or indirect.

1. It is direct, by presenting its objects. Danger excites Cautiousness; praise, Love of Approbation; objects happy or unhappy, Benevolence; objects or conduct calculated to cause respect, excite Veneration. Our external circumstances educate us through life. If we are in the society of self-esteeming, combative, and destructive men, these organs are excited in ourselves. If we live in society dedicated to war or gain, the corresponding organs assume the ascendency in us. Polished or genteel society is that in which the moral Sentiments and Intellect are predominantly active.

If you wish, therefore, to call forth any organs into power and activity, *present their natural objects.* Exercise Benevolence, in doing good; Veneration, in devotion, &c. In intellectual education, present the objects to the organs, as Form, Colour, &c.

They should be relieved, and worked in groups.

To contribute to continued application, relieve the organs by alternating the studies—as natural history relieves Language; clapping hands, singing, &c., relieve the intellectual organs.

To aid intellectual efforts, employ as many organs as possible. If I wish to lift a weight, and employ one finger, my power is limited to its strength. If one organ only, as Language, is employed, the power is correspondingly limited. Therefore, call in the aid of Form, Colour, &c.; as, in Mathematics, diagrams assist.

2. The indirect stimulus to an organ is by words.[2]

The Intellectual faculties may be excited by the presentation of external objects fitted to call them into action. When excited by

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[1] "American Lectures," edited by Boardman, pp. 290–1. See George Combe's views on Taste more fully, in his "System of Phrenology," vol. ii. p. 277.

[2] From MSS.

The external excitation of the Intellectual faculties.

the presentation of external objects, the objects are PERCEIVED, and this act is called PERCEPTION.[1] Perception is a mental state consequent on impressions made on the nerves of the senses, and communicated by them to the organs of the Knowing and Reflecting faculties. A low degree of development of these organs is sufficient to enable them to perceive the objects which make the impressions; and each organ serves to perceive the objects related to itself. If no idea is formed when the object is presented, the individual is destitute of the power of manifesting the faculty. Thus, when tones are produced, he who cannot perceive the melody of them, is incapable of manifesting the faculty of Tune. When a coloured object is presented, the individual who cannot perceive, so as to distinguish the tints, is destitute of the faculty of Colouring; and so forth. Thus Perception is a mode of action of the faculties which form ideas; but it is not an independent primitive faculty. This doctrine is not theoretical, but is clearly indicated by facts.[2]

The importance of this principle in Education.

If the presentation of the object of a faculty rouse it into instant action,—as suffering, Benevolence—or danger, Cautiousness,—this becomes a highly important principle in the education of children. If, in our intercourse with them, we assume the natural language of Destructiveness and Self-esteem, we shall cultivate these faculties in their minds by exciting the organs; if we manifest Benevolence and Veneration in their presence, we shall excite the same faculties in them; if we discourse constantly about money, the desire of increasing it, and the fear of losing it, we shall stimulate the organs of Acquisitiveness and Self-esteem in them, and increase the power of these Propensities.[3]

(2.) *By direct Imitation.*

The effects of Imitation on the faculties.

Imitation gives the power of assuming those gestures which are expressive of the thoughts and feelings of the mind, and hence is requisite to the accomplished orator. In private life, some individuals accompany their speech with the most forcible and animated expressions of countenance,—the nascent thought beams from the eye, and plays upon the features, before it is uttered in words. This is produced by much Imitation and Ideality. In children, Imitation is more active than in adults. Young persons are very apt to copy the behaviour of those with whom they associate; and hence the necessity of setting a good example before them, even from the earliest years. "Children," says Locke, "(nay men, too) do most from example; we are all a sort of chameleons, that still take a tincture from things near us.[1]

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[1] See a note on this subject by Dr H. C. Watson [a distinguished phrenologist, and, for a time, editor of the *Phrenological Journal*] in *Phrenological Journal*, vol. x. p. 497. I have partially adopted Mr Watson's ideas there expressed.—(G.C.)

[2] "System of Phrenology," vol. ii. p. 197. This is the Phrenological doctrine of Perception. See it worked out, in George Combe's "System of Phrenology," in the chapter on Modes of Action of the Faculties, vol. ii. p. 183 and p. 197.

[3] "System of Phrenology," vol. ii. p. 190.

(3.) *By Sympathetic Action.*

The nature of Sympathy:

SYMPATHY[2] may be defined to be a fellow-feeling in one person, with emotions experienced by another. By attending to the laws which regulate the activity of the mental faculties, we shall discover the true nature of this affection, and the circumstances most favourable to its occurrence.

(1.) Caused by exciting objects;

Every internal faculty, like each of the external senses, is most powerfully and most agreeably roused to activity by the direct presentment of its own objects. Cautiousness, for instance, by the aspect of danger; Benevolence, by that of suffering; and so on. Hence, if two individuals of nearly similar constitutions of mind be exposed to the operation of the same external causes, the same faculties being called into activity in both, will give rise to similar emotions; and they may then be said to *sympathise* with each other. This is one kind of sympathy, but it is not the state of mind to which that term is most correctly applied.

(2.) By the Natural Language of the faculties.

The next source of stimulus to the faculties is that afforded by Natural Language. When any faculty is predominantly active, it gives a peculiar expression to the features, and certain determinate attitudes to the body, the import of which is intuitively understood by all who possess the same faculty even in a moderate degree. Thus, Self-esteem being predominantly active, communicates to the body a cold, formal, erect, and haughty air. This air is recognised intuitively by the spectator as indicating excessive pride in the individual who exhibits it; and it is called the Natural Language of Self-esteem. Now, by a law of our constitution, the Natural Language of any active faculty invariably excites the same faculty to action, and, consequently, gives rise to the same emotions in the minds of those who witness it. The forbidding strut of great Self-esteem, for instance, in a person whom we never saw before, addresses itself directly to our Self-esteem; we instinctively *draw up*, and feel moved to support our own consequence by a coldness proportioned to his. In like manner, when we meet for the first time with a person whose countenance and gestures express kindness, candour, and open-hearted friendship, which are the Natural Language of active Benevolence, Conscientiousness, and Adhesiveness, the same emotions are excited in ourselves, and we instinctively return his advances with a kindness corresponding to his own. Or let us imagine that we hurry to meet a friend, whom we expect to find all happiness and gaiety, and that, instead of this, seriousness, anxiety, and grief are depicted on his countenance, and indicated by his gestures; these, being the Natural Language of Cautiousness and other faculties painfully affected, will call up a corresponding affection of the same faculties in our minds, and, without knowing what has distressed him, our features and attitudes will at once assume an expression consonant with his own. It is to this involuntary and almost unconscious communication of feelings and emotions from the mind of one individual to that of another, through the medium of Natural Language, that the term Sympathy is most properly applied.

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[1] Locke's Thoughts concerning Education, s. 67. "System of Phrenology," vol. i. p. 517.

[2] I am indebted to the kindness of Dr Andrew Combe for the following observations on Sympathy.—(G. C.)

This illustrated: By panics;

An excellent illustration of this kind of Sympathy is to be found in the effects of a panic, or excessively excited Cautiousness in one individual exciting the same feeling in all who behold it. The very sight of a panic-stricken person, when we do not know the cause which has given rise to the alarm, excites a general uneasiness about our own safety; and if a great number of persons together, and at the same instant, perceive the terrified expression, it instantly rouses the faculty of Cautiousness to its highest pitch of activity in all of them, and produces the most intense feelings of dread and alarm. Such are the causes and origin of panics in battles and in mobs; and hence the electric rapidity with which passions of every kind pervade and agitate the minds of assembled multitudes.

By its effects in a city.

Another and very familiar example of this kind of Sympathy may be seen in a crowded city. Let any one in passing along London Bridge, for instance, stop short, and turn up his face, with his mouth half open, as if stupified with wonder and amazement; and immediately the same expression, being the Natural Language of Individuality and Wonder, will be transferred to the countenances of nine-tenths of the passengers—not one of whom, of course, will be able to assign any *direct* cause for the emotion with which his mind will be filled. As the Propensities and Sentiments employ the Intellect to minister to their gratification, if the wag happen to say that it is something vastly surprising in the heavens which attracts his gaze, the majority of the curious in wonders will soon, by a stretch of intellectual conception, come to perceive *something* where nothing actually exists.

It explains the differences in Sympathy.

True Sympathy, then, arises from the Natural Language of any active feeling in one individual exciting the same feeling in another, "*antecedently to any knowledge of what excited it in the person principally concerned*"; and, therefore, as the stimulus of Natural Language is secondary or inferior in power to that derived from the direct presentment of the objects of any faculty, it is easy to explain why the person who feels sympathetically feels less deeply than the person with whom he sympathises. The same principle explains, also, why all men do not sympathise in the same degree, and why, in some cases, the spectator does not sympathise at all. If the objects presented be such as to afford a *direct* stimulus to a different faculty in us, from that exhibited in activity by another, it follows that, in virtue of the stronger influence of the direct excitement, the particular faculty which it addresses will be roused into higher activity than the one which has only the less powerful stimulus of Natural Language, and thus a totally dissimilar emotion will be experienced. For example, let us suppose that a man with a good endowment of Combativeness and Destructiveness is attacked on the highway; the menacing looks and gestures (the Natural Language of these faculties) displayed by the aggressor instantly rouse them into energetic action in the defender, and force is repelled by force. But suppose that the attack is made upon a woman, or an individual in whom Combativeness is only moderate, and in whom Cautiousness predominates, the attack then becomes a direct stimulus to Cautiousness, which, being excited, produces *fear;* and the direct stimulus of Cautiousness overpowering the indirect stimulus of Combativeness, submission or flight is resorted to, rather than defence.[1]

If you will read the section on Sympathy, in the second volume of my "System of Phrenology," you will see the cause of the likes and dislikes of children and adults.[2]

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[1] See the full treatment of this important subject, in George Combe's "Elements of Phrenology," vol. ii. p. 265, *et seq.*, which is full of practical application to conduct and to education.

[2] In letter, to an educational friend, of 12th August 1852.

(4.) *By Exciting the Natural Language of the faculties.*

The Natural Language of the faculties explained.

Every Propensity and Sentiment of the mind, when *predominantly* active, produce a peculiar tone in the voice, expression in the eye and countenance, and also a peculiar attitude and gait. This is the Natural Language by which its activity is made known, and, when strongly marked, it is recognised and understood in all ages and countries. Lavater's system of Physiognomy was founded on this fact in nature; but it was imperfect, because he did not know the primitive faculties which the various expressions noted by him indicated; and he also introduced, as signs of mental character, the hard parts of the face, which do not owe their forms to the state of the brain. Phrenology reveals the functions of the primitive faculties, and enables us to connect peculiar expressions of voice, countenance, and gait, with the active condition of particular powers, and also of particular groups of them, and thus renders Physiognomy, or Natural Language, a branch of the Philosophy of Mind.[1]

The effects on the child of *our* using it.

One branch of Phrenology offers great assistance in Training, which, to the uninitiated and the mere readers of phrenological books, actually appears ludicrous when first mentioned. I allude to the Natural Language of the faculties. The maxim is very ancient—"*Si vis me flere, dolendum est primum ipsi tibi;*[2] if you wish to excite to weep, begin by weeping yourself. If you wish to train any faculty in a child, exhibit the activity of it in your own countenance, tones of voice, gestures, and language, and you will rouse it into action in him. The formation of habits, by a repetition of action, is the aim of Training.

The effects on the child of *his* using it.

I go farther still. Teach the child to *exhibit* the Natural Language of the faculty, *and the very act of doing so will call up the emotion.* If you find a child cross and ill-humoured, and you induce him to utter some kind speech to one of his companions, expressive of Benevolence, and to suit the action to the word—to smile and look benignant, and to use soft and tender tones—you will find that his crossness cannot co-exist with this effort, if successful. It arouses Benevolence, and he becomes, for the moment, what he seems. If the action be often repeated, the emotion will become permanent. The phrenological explanation is simple. The Natural Language is to the faculties what sound is to the ear: it rouses them into action. The idea of teaching children to *act* the Natural Language of the faculties which we wish to cultivate, may appear, as

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[1] "America," vol. iii. p. 93.

[2] Horace, *De arte poetica*, 102.

I have said, ludicrous to many persons: but the Creator has given us a capacity for acting—a faculty which enables us to call up the natural expressions of emotions when we want them—it is Imitation; and why should this power, divine in itself, be applied only to buffoonery or mischief? Most parents repress the talent of Imitation in children, because it is often so misapplied as to create enemies. I propose to direct it to its legitimate uses.

Its influence on the disagreeable Feelings; This idea is not entirely theoretical. I have known several eminent and philosophical actors, and they have assured me that they become, for the time being, the character which they represent. The late Mrs Siddons was mentally Lady Macbeth, from the moment when she stepped into her carriage at her own door, till the curtain fell at her last scene and she had resumed her private dress. She did not approve of any person intruding on her feelings and attention during the progress of the play, even between the acts. One effect of the constant practice of players in calling up and exhibiting the Natural Language of the Feelings, is to render some faculties habitually prone to action in themselves in private life. The great tragedian who may be said to wield a magician's power over the Propensities and Sentiments of his audience, by means of Natural Language, suffers in his own mind many tragic feelings, from the trained activity of his organs. Many are irritable, in consequence of the trained action of Combativeness, Destructiveness, and Self-esteem, the stock elements of heroic and tragic characters. They are often melancholy and desponding, from the trained action of Cautiousness, which furnishes the perturbed and distracted countenance, the horror-stricken look, the shriek of despair, and sometimes the madness that petrify us when represented on the stage. The higher Sentiments and Intellect of the actor may govern his deportment in public so that his general acquaintances may not observe these effects, but the close spectator recognises them, and the actor confesses and laments them to his bosom friend.[1]

On the higher Sentiments; The converse effects may be seen in persons whose vocation calls on them to put forth the Natural Language of the higher Sentiments. Who does not recollect the benignity, the heavenly purity, and the soft and soothing tones of the voice of the Rev. Dr Tuckerman of this city?[2] These radiant beams of Christian emotion are the Natural

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[1] George Combe married Cecilia Siddons, a daughter of the great actress, Mrs Sarah Siddons, and thus had special opportunities of knowing the great actors, with some of whom he was intimate, such as Fanny Kemble. See the "Life of George Combe" by Charles Gibbon, vol. i. p. 283, &c.

[2] Boston, U.S.

Language of Benevolence, Veneration, and Hope, which he is constantly calling into play, in ministering as a home missionary to the poor, the wretched, and the depraved. Has any one observed a similar expression of benevolence and radiant joy in the countenance of Dr Woodward,[1] the superintendent of the Worcester Hospital for the Insane? It is the Language of those sentiments of tender sympathy and cheering hope, which he is habitually pouring into minds diseased, and which are the best antidotes to their afflictions.

On irritation and the lower passions;

Another example may be mentioned. The Rev. Mr Gallaudet,[2] of Hartford, was for many years head Instructor of the deaf and dumb, in the Institution near that city. He informed me that, however much annoyed in his own temper, however peevish and even irritable he might be; the moment he began to instruct his pupils by the Natural Language of the higher Sentiments, which was the only medium whereby he could cultivate these feelings in them, his evil genius fled, and the spirit of peace and good-will reappeared in his bosom. He added that he had often subdued the worst passions in his deaf and dumb pupils solely by radiating on them the Natural Language of Benevolence, expressed in compassion and regret. He has stifled rage also, and brought forth the beauty of kindly affection, by insisting on the refractory pupil exhibiting the Natural Language of virtuous feeling. He is so impressed with the importance of Natural Language as a means of training the Feelings, that he has strongly recommended it in his writings.

On the insane;

Again, Dr Woodward told me, when I visited the Worcester Hospital on 20th December 1839, that he finds the activity of the diseased faculties in his patients much increased by the presence or even insignia of their objects. If a quarrelsome man find a feather and stick it in his hat, he instantly erects his head and becomes a soldier; and his diseased propensity rages more fiercely. Dr Woodward coaxes him to yield up the feather, and to lay aside his military air, saying to him, "We are all civilians here;" and his pugnacity is mitigated. If a female patient who fancies herself a queen get a shawl or other means of making a robe, with a little finery and embroidery, she puts it on and constantly struts and sidles about with majestic airs, and her disease is aggravated. He persuades her to part with it, as "we are all republicans here, and queens might not be properly respected;" and the intensity of the diseased feeling gradually abates.

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[1] Superintendent and physician to the Lunatic Asylum, Worcester, Massachusetts. See an account of him and his institution in George Combe's "America," vol. i. p. 53; and vol. iii. p. 214.

[2] Thomas Hopkins Gallaudet, born in Philadelphia in 1787, died in 1851. Though trained for the ministry, he devoted himself to Education, especially to that of deaf-mutes. He studied the subject under Abbé Sicard, in France, and elsewhere, and then founded the first institution in America for their instruction, at Hartford, in 1816, called the American Asylum for the Education of the Deaf and Dumb, which he superintended till 1830. He is the author of many educational works. He was a remarkable man. George Combe visited him when in America, as also the Hartford Institution. See an account of him in "America," vol. iii. p. 92, *et seq.;* also in Kiddle & Schem's "Cyclopædia of Education."

On defective faculties.

If any of the lower feelings be defective, the same means may be used to cultivate them. If a child be too timid, put a feather in his hat and make him a soldier, or place him in the attitude of Combativeness, and teach him to box with gloves; and this organ will become more active. If another be too humble and want self-reliance, make him march and strut with the air of Self-esteem and Firmness; and you will improve his confidence in himself.

Its action to be distinguished from that of Imitation.

One precaution must, however, be added, in recommending Natural Language as a means of Training. Some children possess, in a high degree, the combination of faculties which constitutes the professional actor, the chief of which are Secretiveness and Imitation, and they have a natural talent for acting. They will, therefore, favour you with the Natural Language of the various organs which they enjoy adequately developed, and be essentially acting all the time. If one of them have strong Propensities, and be deficient in Conscientiousness, he may "smile and smile and be a villain." He *may* deceive you; but if he *be* a villain, he was one before the training which I recommend was administered, and, in my opinion, that training will do more to render him sincere, by giving his higher powers the ascendency, than could be accomplished by any other method.[1]

Natural Language may be taught to children.

The Rev. Mr Gallaudet, without the aid of Phrenology, but from extensive practical observation and experience, has been led to the conclusion that these Natural Signs may be taught with manifest advantage to children in general, as a branch of education. In the American *Literary and Theological Review*, No. ii., for June 1834, he published an article entitled "On the Language of Signs" as "auxiliary to the Christian Missionary." "It is quite practicable," says he, "to convey by the countenance, signs, and gestures, the import not only of all the terms employed to denote the various objects of nature and art, and the multifarious business and concerns of common life, but also those relating to the process of abstraction and generalisation, to the passions and emotions of the heart, and to the powers and faculties of the understanding; or, in other words, the language of the countenance, signs, and gestures, is an accurate, significant, and copious medium of thought. Instances have occurred, in the instruction of the deaf and dumb, in which, in the space of two years, 5000 words have been taught to several intelligent pupils, who were previously entirely ignorant of them and *of all language*, excepting that of their own natural signs; together with a command of written language, which would place them on an equality, with regard to the expression of their ideas, with the most intelligent persons among those heathen nations who have nothing but an oral language."[1]

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[1] From "Address to the Boston Phrenological Society, in Dec. 1839." Republished in *Phrenological Journal*, vol. xv. (1842), p. 206.

Examples of its teaching.

Mr Gallaudet considers that it would essentially benefit children to teach them the Natural Language of the faculties at the time when they learn to read. The meaning of many words, particularly those which signify emotions, could be conveyed to them more effectually by this medium than by any other. In exhibiting the Natural Language of any faculty, the faculty itself is called into action, and teaching the Natural Language will thus become an important auxiliary in training children to virtue. He has the testimony of his own experience, in favour of this view. In showing to his deaf and dumb pupils the Natural Language of Benevolence, Veneration, and the other higher Sentiments, he was conscious that these faculties became more active and were cultivated in himself. In his pupils, the effect was equally decisive. When they were out of humour, the bland look of Benevolence, and the resigned expression of Veneration, if perseveringly exhibited to them, rarely failed to restore their equanimity and cheerfulness.

How to use it in Education.

I owe to Mr Gallaudet the first clear view of the importance of Natural Language in common education.[2]

(5.) *By Internal Causes.*

The faculties of the *Propensities* and *Sentiments* cannot be excited to activity *directly*, by a mere act of the Will. We cannot conjure

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[1] "America," vol. iii. p. 934. See remarkable instances of the power of communication by signs, as given by Mr Gallaudet, in "America," vol. iii. p. 121.

[2] "America," vol. iii. p. 97.

The spontaneous activity of the Feelings.

up the emotions of fear, compassion, and veneration, by merely willing to experience them. The Feelings may, however, be brought into activity from internal causes: some feel an internal prompting to fight or oppose; some, to pursue wealth; some are passionately fond of the constructive arts—without knowing whence, how or why these feelings came. They spring from the *spontaneous activity* of the organs by which they are severally manifested, and each organ has a tendency to activity in proportion, *cæteris paribus*, to its size. From this activity arises the subject of continual thought. One in whom Love of Approbation and Self-esteem are large, will be fired with ambition, and love to be clothed with authority. I saw a child yesterday, eight years of age, in whom Love of Approbation, Imitation, Individuality, and Eventuality are large; and already the chief desire he has is to see his name in print. Insanity is the result of this spontaneous action, when excessive and not controllable by the will. Sometimes one organ is morbidly active, while the others are sane; there have been instances of people requesting to be bound, that they might be prevented from giving way to their strong desire to commit manslaughter. In such cases, to convince the Intellect is useless: the aberration depends on cerebral disease; and you might as well attempt to talk gout out of the toe, as to talk disease out of the brain.[1]

The influence of the Will on the Feelings;

The Propensities and Sentiments may be excited to action, or repressed, *indirectly*, by an effort of the Will. Thus, if the Knowing faculties, which form ideas, be employed to *conceive* internally objects fitted by nature to excite the Propensities and Sentiments, the latter will start into action in the same manner, though not with so much intensity, as if their appropriate objects were externally present. For example, if we conceive inwardly an object in distress, and Benevolence be powerful, compassion will be felt, and tears will sometimes flow from the emotion produced. If we wish to repress the activity of Ideality, we cannot do so by merely willing that the Sentiment be quiet; but if we conceive objects fitted to excite Veneration, Cautiousness, Self-esteem, or Benevolence, the organs of these feelings will then be excited, and Ideality will sink into inactivity. The vivacity of the feeling, in such cases, will be in proportion to the strength of the conception and the energy of the Propensities and Sentiments.

If the organ of any Propensity or Sentiment enter into vigorous

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[1] American Lectures, edited by Boardman, p. 277.

Of the Feelings on the Intellect.

action from internal causes, it will prompt the Intellectual faculties to form conceptions fitted to gratify it; or, in other words, the habitual subjects of thought will be determined by the organs which are predominantly active from internal excitement. If the cerebellum be permanently active, the individual will be prone to collect pictures, books, and anecdotes fitted to gratify the feeling; his mind will be much occupied with such ideas, and they will afford him delight. If, in another individual, Constructiveness, Ideality, Imitation, and the Knowing organs, be internally active, he will desire to see pictures, busts, and works of art, in which skill, beauty, and expression are combined; or he will take pleasure in inventing and constructing them. He will know much about such objects, and be fond of possessing them, and of talking about them. If, in another individual, Acquisitiveness be internally active, he will feel a great and natural interest in all matters connected with wealth, and be inspired with an eager curiosity to know the profits of different branches of trade, and the property possessed by different individuals. If Benevolence be internally active, the mind will run habitually on schemes of philanthropy, such as those of Howard, Mr Owen,[1] or Mrs Fry. In these cases, the *liking* for the object or pursuit will depend upon the particular Propensities or Sentiments which are active; the Intellectual faculties serving merely as the ministering instruments of their gratification. If the pursuit be purely intellectual, such as the study of mathematics or algebra, the *liking* will arise from the activity of the Intellectual faculties themselves.

These principles enable us to explain the great variety of tastes and dispositions among mankind; for in no two individuals are all the organs to be found combined in the same relative proportions, and hence every one is inspired with likings in some degree peculiar to himself.[2]

The spontaneous activity of the Intellect.

The Intellectual faculties may become active from excitement of the organs by *internal* causes, and then the kinds of ideas which they are fitted to form are presented involuntarily to the mind. The musician feels the notes flowing on him uncalled for. A man in whom Number is powerful and active, calculates by a natural impulse. He in whom Form is vigorous, conceives figures by natural inspiration. He in whom Causality is powerful and active, reasons while he thinks, without an effort. He in whom Wit is energetic, feels witty conceptions flowing into his mind spontaneously, and even at times when he would wish them not to be present.[1]

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[1] Robert Owen, the great social theorist, philanthropist, and educationist, the founder of New Lanark and other communistic gatherings in this country and America, and founder, at New Lanark, of the first Infant School. He was born in 1771, and died in 1858, the same year as George Combe. See a criticism of his system by George Combe in the *Phrenological Journal*, vol. i. (for 1823-4), pp. 218 and 463.

[2] System of Phrenology, vol. ii. p. 191.

The effects of this activity when morbid.

When any of the Knowing or Reflecting faculties is internally active, it conceives ideas of the objects to which it is related. Thus Locality, Colouring, and Size being active, we are able, with our eyes closed, to conceive a landscape in all its details of hill and dale, sunshine and shade.

If this internal action become morbid, through disease of the organs, then ideas become fixed, and remain involuntarily in the mind; and, if this be long continued, it constitutes insanity. Many persons have experienced, when in the dark, vivid impressions of figures of every variety of colour and form passing before the mind, sometimes invested with alarming brilliancy and vivacity. I conclude that this arises from internal excitement of the organs situated at the superciliary ridge, namely, Form, Locality, Colouring, and others. This affection is, in most instances, only momentary; but suppose that it were to become fixed and continuous, then the mind would be haunted by permanent and vivid conceptions of fantastic beings, invested with more than the forms and hues of reality. This would be insanity: not a morbid feeling, such as melancholy, or fury, or religious joy, but an intellectual delusion; every sentiment might be sound, yet this aberration of intellect might remain fixed, and immovable by the will. If we suppose this disease to take place in several Knowing organs, leaving the organs of Reflection entire, it is quite possible to imagine the individual may have false perceptions on some points, and not only be sane on all others, but be able, by means of the faculties that remain unaffected, to distinguish the erroneous impressions. Such cases actually occur.

This explains spectral illusions.

The phenomena of apparitions, or spectral illusions, may be accounted for by the principles now explained. If several organs become active through internal excitement, they produce involuntary conceptions in outward subjects, invested with all the attributes of form, colour, and size, which usually distinguish reality. Many interesting examples of this affection are given in *The Phrenological Journal.*[1]

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[1] System of Phrenology, vol. ii. p. 197.

10. HOW TO REPRESS OVER-ACTIVE FACULTIES.

To repress the faculties:

To repress faculties too active, leave the organs inactive; avoid causes that stimulate.[2]

(1.) Leave them inactive.

We have not the power of preventing our feelings, but we have the power of controlling them. They start into involuntary activity; it is for the Moral Sentiments to supply the curb. In most, the strength of their impulses needs to be lessened; and, recollect that every day in which the Moral Sentiments are trained, the activity of the Propensities are diminished; just as, by using the right arm exclusively, we would diminish the power of the left.[3]

They cannot be eradicated.

Let us consider the extent of our power to modify the manifestations of the faculties. As Phrenology teaches that the faculties are innate, and that each has received a determinate constitution from nature, it follows according to it that we cannot *change* the nature of any individual, and that all we can do is only to regulate the activity of the several faculties in their own outward manifestations.

We have already discussed the best modes of increasing the activity of these faculties; and, in doing so, we have anticipated, in some degree, the discussion of the extent of our powers of modification. Great as these powers undoubtedly are, it must not be concealed that all our exertions to cultivate the Moral and Intellectual powers, and to restrain the Propensities in their external manifestations, by example, by precept, and by active employment, may sometimes turn out unavailing; and that some individuals will prove ultimately vicious, after every endeavour, conscientiously and intelligently applied, to reclaim them. Phrenology not only admits this fact, but explains the causes of it, and affords us great assistance in applying every possible remedy to the evil. Strong propensity to vice arises from great natural endowment of the

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[1] Vol. i. p. 541; ii. 111, 293, 362; v. 210, 319, 430; vi. 260, 515; vii. 9, 162; x. 47, 217.—(G. C.) The above is from the same journal, vol. ii. p. 201, where the subject is fully discussed.

[2] From MSS.

[3] American Lectures, edited by Boardman, p. 341.

11. THE INFLUENCE OF THE TEMPERAMENTS IN EDUCATION.

The Temperaments

In educating children, it is of the utmost importance to take into consideration the influence of Temperament.

(1.) The Nervous and studious.

If the Nervous Temperament predominate, the child is delighted to learn. He will be constantly at his books. He is intelligent, and shows such an intensity of feeling that he twines himself round the affections of his parents, who are in raptures at his astonishing progress, and urge him on his career, ignorant of the almost inevitable result. The nervous energies being drawn to the brain, the digestive system suffers most materially; and while, by his premature development, he stands conspicuously above children of his own age, the blaze of excitement in which he is kept, by continued thinking and feeling, soon undermines his health, and, if not arrested, throws him into a premature grave. In such cases, add not to, but keep down the excitement. See that such children take much exercise in the open air; urge them to lay down, rather than take up a book. To do otherwise is to break the law of nature, or of nature's God; and long life is promised, not to those who break, but to those who obey His law. And the promise is fulfilled. That life is long and happy which is spent in obeying the laws which are made manifest by observing and reasoning upon the nature of man and external things.

(2.) The Sanguine and active.

When the lungs predominate in a child, and the Sanguine Temperament, there is fondness for exercise; the food is heartily eaten; the sleep is sound. Suppose a child of this Temperament to be sent to school, after a sound sleep and comfortable breakfast. For a time, he may be still; but, in a while, the craving for muscular exercise will be too strong; he may be pent up, but he cannot be kept quiet. He begins to be fidgety; may receive blows for it, but still he fidgets; the blows may be repeated, but without effect; he continues fidgeting, poking with his elbows, throwing peas, striking his neighbours with his feet, and trying in every way to expend this energy. Such children are generally said to be very clever, but to have no liking for books. The usual plan has been to scold such children well; and if not quieted by this, as is very unlikely, the scolding is followed by a flogging, which is generally as inefficacious. The object should be to remove the causes of the evil. Let us attend to nature; give such children an opportunity of expending their *muscular* energy, and then they will be delighted with *mental* activity.

Dr Howe of Boston[1] related to me an anecdote which finely il
trates this position. He had a boy who was the most mischievou
ever met with. He broke the benches and boxes, wrenched the d
off their hinges, played all sorts of pranks, and could not be control
Dr Howe thought of dismissing him, but, knowing there must
cause for this disposition, he reflected upon the subject, and
upon an admirable remedy. This was to send him into the ce
every morning, to saw and split wood for three hours toget
The boy was delighted, and had soon sawn and split all the w
up. He was then set to running, leaping, climbing poles, and
sporting himself in a variety of ways. Thus he got rid of the ex
sive muscular energy, and afterwards proceeded with his studie
a proper manner; the doors and benches were perfectly safe.

Dr Howe found that so long as a legitimate and adequate v
for his excessive muscular energy was provided, he conducted h
self with propriety, and was capable of mental application.[2]

(3.) The Fibrous and enduring.

The Fibrous (generally, but improperly, termed the Bili
Temperament is distinguished by black hair, dark skin, mode
fulness, and much firmness of flesh, with harshly expressed out
of the person. It gives energy and a power of continuing long
action to the bodily organs, which extends to the brain. The eff
of it are great powers of sustained action, mental or corporeal,
responding to the quality expressed by the word "bottom" w
applied to horses.[3]

(4.) The Lymphatic and slow.

Some children are of the Lymphatic Temperament; these
slow to learn and indisposed to activity. The remedial plan
been to flog them continually. A much better is to study t
constitution, and regulate our treatment accordingly; to give s
children a moderate supply of nutritious diet—animal rather t
vegetable—and let them have plenty of muscular exercise in
open air. By these means, you diminish the Lymphatic, and incr
the Sanguine and Nervous elements of the constitution.[4]

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[1] Dr Samuel Howe, teacher of Laura Bridgman ; already noticed p. 122

[2] This story is also told in America, vol. i. p. 217.

[3] Phrenology applied to Painting and Sculpture. See America, vol. i
128, where some practical discriminations of the Temperaments are given.

[4] American Lectures, edited by Boardman, p. 335. See an exposi
of the Temperaments, in George Combe's System of Phrenology, vo

he different Temperaments are rarely found pure. The common ons are the Sanguine-lymphatic, the Nervous-lymphatic, and Nervous-bilious.[1]

The Management of the Temperaments.

I call your attention particularly to the fact, that, in all countries, method used to correct the defects of organisation and Tempera- nt has been to flog and shame the child that needed improvement ne of the most gross instances of the application of brute force the accomplishment of that in which attention to the laws of the stitution can alone be successful. It follows, from what I have d, that no rule can be laid down applicable to all cases. Specific fferences must be closely attended to in the business of education.[2]

49, 61, &c.; and in "The Scientific Basis of Education," by John Hecker, ector of Schools, New York (New York: published by the author, 56 gers Street, 1868), a work which contains valuable practical hints on cation, and in which the Temperaments are made its basis.

Phrenology applied to Painting and Sculpture.

American Lectures, edited by Boardman, p. 337.

CHAPTER II.

PHYSICAL EDUCATION.

1. THE DEPENDENCE OF THE MENTAL ON THE PHYSICAL, IN HUMAN NATURE.

The Physical precedes the Mental in nature.

THE *physique* must precede the *morale* in the order of nature. We must be well lodged, clothed, nourished, and altogether physically comfortable before we can bend our minds successfully to refinement, philosophy, and the investigation of abstract science.[1]

The Physical conditions the Mental.

Dr Caldwell's work[2] is limited to Training; and it is important to keep this fact steadily in view, that his reasoning may not be misapprehended. He regards education as a scheme of action by which any living being may be improved, and, by perseverance, raised to the highest perfection of which it is susceptible. The organised system of man constitutes the machinery by means of which the mind operates during life. Every one, says he, admits that the legs and arms may be strengthened, and rendered more agile, by means of judicious exercise; and most persons acknowledge that the external senses also may be improved by similar means; the savage, whose ear is cultivated as the means of his safety, hears sounds that are inaudible to a civilized European. But the effect produced in these instances results entirely from an improvement *in the conditions of the organs.* The same may be affirmed, with equal safety, respecting the higher mental operations. In performing these, the mind acts by means of the brain, as certainly as it does by the eye in seeing, and by the muscles in dancing or fencing. When any form of memory or the power of reasoning is exercised by judicious training, the mind itself is not changed. The improvement in this, as in the preceding cases, is confined to the organs by the aid of which the mind remembers and reasons. Physical education, therefore, lies at the foundation of all successful training, both bodily and mental.

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[1] America, vol. ii. p. 198.

[2] "Thoughts on Physical Education, and the True Mode of Improving the Condition of Man," by Charles Caldwell, M.D., with a recommendatory preface by George Combe (Edinburgh: Maclachlan & Stewart). It was originally published in Boston, U.S., in 1834, and acquired great popularity.

What Physical Education truly means.

Dr Caldwell remarks, that the more philosophical and useful manner of viewing Physical education would be, to regard it as a process for training the different parts of our corporeal system to their highest state of attainable perfection, each according to its own constitution and functions. The skin, for example, must be treated by one mode of discipline, the stomach by another, and the lungs by a third. And, in like manner, if the Feelings common to man and the lower animals are connected with one department of the brain, the Moral Sentiments with another, and the Intellectual Powers with a third: it is necessary to train each of these separately, by means adapted to the nature of the function, and to the object which we have in view, whether this be to repress or exalt its energy; and we shall err and suffer disappointment, if we attempt to educate the whole mind by *one* process, by whatever name we may designate it. "The condition of the morals of every individual," says he, "depends on the condition of the moral organs of the brain, the condition of his intellectual on that of his intellectual organs, and the condition of his physical powers on that of the remaining portion of his body,"—including the skin, digestive viscera, lungs, heart, muscles, and the organs of secretion and absorption. All these parts, he observes, are so mutually dependent, that no one of them can be materially injured or benefited alone. If the digestive, respiratory, and circulatory systems, or either of them, are seriously deranged, the brain suffers for want of a sufficient supply of blood, to nourish, vivify, and strengthen it. If the brain itself is materially deranged, it is incompetent to furnish, in due quantity and of sound quality, the nervous influence of which the other parts of the system constantly stand in need, and therefore they suffer in turn. "Hence," he adds, "Moral and Intellectual education, which consists in amending the condition of the brain, and Physical education, which is the improvement of the other parts of the body, are indispensable to the perfection of each other, and, of course, to that of the whole system. Physical education is, to the other two, what the root, trunk, and branches of a tree are to its leaves, blossoms, and fruit; it is the source and *sine qua non* of their existence. Injure or improve it, and you produce on them a kindred effect. Hence, Physical education is far more important than is commonly imagined. Without a due regard to it, by which I mean a stricter and more judicious attention than is paid to it at present, man can-

The relations of Physical to Mental education.

not attain the perfection of his nature. Ancient Greece might be cited in confirmation of this. May history and other forms of record be credited, the people of that country were, as a nation, physically and intellectually the most perfect of the human race; and there is reason to believe that their unrivalled attention to Physical education was highly influential in producing the result."[1]

Hence the importance of Physical education.

As the power of manifesting the faculties depends on the state of the organs, it is of importance to remark that we are able to exercise a considerable influence on the organisation of the body by Physical education. Parents, therefore, ought to be aware that the power of the child, in future life, to manifest the faculties of the mind will often depend, in a considerable degree, on the mode in which his Physical education is conducted.

Mental exertion as influenced by the nervous system;

Too great sensibility of the nervous system is unfavourable to mental exertion, but too great muscular power is also averse to it. The great object of parents, therefore, ought to be to fit their children for the scenes in life in which they intend them to act. If the individual be destined to a learned profession or literary pursuits, his Physical education ought to be conducted in such a way as to give him due muscular power, but not to render him too athletic. If, on the other hand, he is destined for labour, his constitution cannot be rendered too robust.

The sensibility of the nervous system will be powerfully affected by diet and exercise. Too little attention is paid to adapting the diet of children to their constitutions. The impression is too prevalent that food to be wholesome for children must be vegetable or succulent. To many constitutions, no doubt, such kinds of food are best adapted; but where the digestive organs are weak, vegetable diet should be sparingly given, and animal food without sauce or high seasoning more generally administered.

As influenced by physical exercise.

Exercise in the open air is favourable to all children, if not carried to excess, but if indulged to a great extent, and till too advanced a period of youth, the individual becomes in a great measure incapable of exerting the mental faculties. Exercise in the open air, and amidst new and varied objects, is unfavourable to reflection, and to those labours which require a concentration of the powers of the mind. It gives a greater tendency to exert the Sentiments than the Reasoning faculties.

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[1] From the preface to the above edition of Dr Caldwell's "Thoughts on Physical Education," 26th May 1836.

An augmentation of the tone of the muscles diminishes nervous mobility. When, therefore, weakness of mental functions is owing to too great mobility of the organic system, exercise is beneficial, because it contributes to give stability and energy.

Repose has a contrary effect. Those who live a sedentary life think and feel more than the active, unless their sedentary habits are carried so far as to produce diseases of the organization, and then the manifestations of the mind are less active.[1]

2. GENERAL NOTES ON PHYSICAL EDUCATION.[2]

The subject of Physical education is exceedingly extensive. My intention is to bring before my non-medical hearers such an account of the human frame as will enable them to appreciate the influence of physical condition on the mind.

The general structure of the body.

You see here the human skeleton. This represents the bones, which form the support to the soft parts, and afford protection to many important organs. Attached to the bones are the muscles, which are fleshy bundles or cords, by the contraction of which the erect attitude is preserved, and motion produced. This drawing represents the brain and spinal marrow, from which nerves proceed and ramify, the brain being contained in the skull, and the spinal marrow in the backbone. Nerves proceed from the circumference of the body to these parts, conveying sensation from them to all parts of the body, producing motion. The skin covers the body and serves to allow an extensive expansion of the nerves of sensation, which renders us sensible to heat, cold, pain, and other feelings, from external causes. There are also innumerable little holes in it, through which the waste matter of the body escapes by perspiration.

The conditions of its healthy growth.

All parts of the body are in a continual state of decay, which occasions of course the necessity of renovation, for if particles of the body are continually passing away, others must be continually supplied. Now this new matter is supplied by the blood, a fluid which circulates through every part, and from which are deposited, in a way of which we have no conception, particles of just the kind necessary to the respective parts requiring them; to muscle it sup-

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[1] Essays on Phrenology (1819), p. 311.

[2] The following notes are chiefly from George Combe's Lectures on Education given in America, in 1838–40.

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are born there die before arriving at two years of age. Now, of such mortality, there is no example in the animal kingdom; and for this no other reason can be adduced, than that by man the laws of health are neglected or outraged, while by the brutes they are instinctively observed. How great an amount of human misery arises from this premature mortality! Hardly one of these children dies, without lacerating a mother's affections and blasting a father's hopes.

The process of digestion;

The food which we eat has to undergo a variety of processes before it can be assimilated to the body, or be made to form a part of its substance. In the first place, it is taken into the mouth, where it is ground by the teeth or masticated. During this process, it is mixed with the saliva, after which it is swallowed, passing from the mouth through a tube into the stomach. This last organ lies in the upper part of the abdomen. It is shaped like a bag-pipe, and has two orifices; by one it receives the meat coming through the food-pipe to the stomach, and by the other, called the pylorus, the food passes into the intestine called the duodenum. The stomach is amply supplied with blood-vessels and nerves, the latter being more numerous here than in any other part of the body, and derived from many different sources; for which reason, it sympathises with almost every other part, and may be considered as a kind of common organic centre. The food undergoes in the stomach such a process as changes it to a greyish fluid called *chyme*, which, when properly digested, presents itself at the lower extremity of the stomach, and passes through the pylorus into the duodenum. But mark this—around the pyloric orifice, there is a band of muscular fibres, which, when contracted, keep it closed, and which have to relax in order that the chyme may pass through. Now, if the food which presents itself is not properly digested, these circular fibres will not relax, but the food is sent back to be digested still more. It may again and again be presented, and again and again sent back; but as this, if carried too far, might cause serious injury, the fibres at length give way, and the undigested food is allowed to pass. When the chyme has arrived at the duodenum, it is mixed with two fluids, one from the liver called bile, the other from the pancreas called pancreatic juice; and it is turned, by their action, into a milk-white fluid called *chyle*. The intestines, like the stomach, have three coats, but the inner or mucous coat is in folds, to give a greater extent of surface. On this an innumerable quantity of small vessels open their mouths, and draw in that part of the food which is fitted to nourish the body; these are called lacteals. They terminate in

And assimilation.

one common tube called the thoracic duct, which passes up posterior part of the chest and empties its contents into a ve called the subclavian vein. The fresh nourishing matter, thus carr with the blood to the heart, is sent to the lungs, to be subjected the vivifying influence of the air.

Fluids taken into the stomach do not go through the same proc but are absorbed, and taken immediately into the blood, whence tl soon reappear in the kidneys, and are thrown out of the body.

The importance of nutritious diet.

I lately visited the Coloured Asylum in this city,[1] which is in ma respects a creditable institution, and there became acquainted witl fact which well illustrates the importance of diet in the training children. Acting under the influence of some teacher who had be lecturing in this city, the managers of the institution had confin the children to an exclusively vegetable diet, with the expectation improving their morals. Now, children should have diet—not exc sive, but sufficient, solid and nutritious. If you give an exclusive vegetable diet, you do, indeed, render the blood less nutritive a stimulant, and thus weaken the Propensities; but as the same blo nourishes also the Moral Sentiments and Intellectual faculties, th are weakened in proportion, and the tone of the whole body is lowere so that nothing is gained in point of morality, and much is lost health and vigour. This was soon discovered. In the Asylum, t effect of this exclusively vegetable diet, manifested itself by means scrofula and general debility. It was laid aside, and under t influence of a more generous diet the children soon began to recov An adequate supply of good and sufficient food is absolutely nec sary to health.[2]

Early personal experiences told.

My mother had been taught that oatmeal porridge and butt milk were the best food for children for breakfast. The butt milk was bought in large quantities from dairymen's carts in t street. Frequently it was not fresh when bought, and it daily beca more acid when kept. To my delicate stomach, it tasted often li vinegar, and I revolted at the porridge. In my mother's eyes, tl was fastidious delicacy of taste, and she ordered the porridge to kept for my dinner. I received a penny to buy a roll for mid-d sustenance. At that time, the quartern loaf ranged from a shilli to twenty pence in price, and the penny roll was a small morsel for a young, hungry, growing boy. On going out, however, I bought the roll at the first shop—there was one close to my father's gate. I ate it dry, and had no more food till half-past two, when I came home to dinner. My mother was not so severe as she had threatened to be, for she gave me a dinner that I could eat; but she never failed to have the porridge served in the morning. In all this she was actuated by a sense of duty alone, for she was ever aiming at our welfare. Ignorance was the rock on which her kindest endeavours were wrecked, and she was not to be blamed for not knowing what nobody else in her rank, or, so far as I have yet discovered, in any other rank of life then knew.[1]

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[1] New York, visited in 1838–40. See an account of this Asylum and vi in America, vol. ii. p. 253.

[2] American Lectures, edited by Boardman, pp. 315–16.

The importance of pure air.

Another essential condition of health is, that the lungs be always supplied with fresh air. These are two bodies, one on each side of the thorax, composed of a light spongy substance, and filled with innumerable air cells, which are said to present an extent of surface equal to twenty thousand square inches. The heart throws the blood into the lungs, and, when we breathe, the air passes into them; so that the blood is on one side of the thin membrane of which the cells are composed, and the air on the other. Through this membrane, the changes which occur in the blood take place. The common air consists of three distinct gases in combination; in one hundred parts of which, seventy-seven are nitrogen, twenty-two oxygen, and one carbonic acid gas. Now, the breath expired is found to differ from the air taken into the lungs, and the blood sent from the lungs is found to differ materially from the blood which was sent to them. Of the air, the oxygen is diminished and the carbonic acid increased; oxygen is therefore considered as the supporter of life. The blood which arrives at the lungs is of a dark purple hue, and is unfit to support life; that which passes from them is of a bright scarlet hue, and is fitted for the body's nourishment. If the air be not pure, the venous dark blood does not undergo the necessary change, but is sent back, of a dark hue, to all parts, and of course to the brain, which, therefore, is not sufficiently nourished and stimulated; great dulness and drowsiness ensue, followed, if continued, by diseased action. To afford sufficient quantity of fresh air in churches, schools, and lecture rooms, is therefore very desirable. If they are not well ventilated, the brain is oppressed, and cannot of course act with clearness and energy.[1]

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[1] From George Combe's Autobiography, in his "Life" by Charles Gibbon, vol. i. p. 24.

Instances of its want.

The importance of pure air is a subject which, until late years, hardly entered into the heart of man to conceive. In the Scotch churches, for instance, it is the practice to go in at eleven o'clock, remain till near one, and go again at two. Now the practice formerly was to close the door as soon as the people came out, in order to keep in the heat. They thus retained the air, vitiated by being breathed in the morning. The people went home, loaded their stomachs, and returned to church. Here, then, the laws of health were clearly violated; first, in breathing bad air, and next, by engaging in serious mental occupation with loaded stomachs. The consequence was, that nature was too strong for the minister, and many of the congregation slept. This annoyed him very much, and many is the sermon which I have heard preached against the sin of sleeping in church. The consciences of the congregation troubled them a good deal, no doubt, but there was no reformation. Now the laws of health are better understood; the moment the congregation pass out of the church, the windows are thrown open, even in the depth of winter, so as to allow a change of air. Instead of eating a hearty dinner, people generally content themselves with a light lunch, deferring dinner till after the second service. By thus conforming with the laws of health, the drowsiness of the Scottish congregations has passed away, and, with it, the occasion for sermons on the sin of sleepiness.

The need of thorough ventilation.

The laws of health, as regards ventilation, were still more outraged in our schools. In the winter season, we were kept in for hours, with the windows closed tightly, and so vitiated did the air become that, to a stranger entering from the street, it seemed almost poisonous. In proportion to the length of time we remained in, the air became vitiated more and more, and the blood worse and worse aerated, losing thus its healthy stimulating properties. This rendered us dull and inattentive; but, in proportion as mental energy decreased, the birching increased, the master attempting to compensate for the stimulus of good blood by the stimulus of pain. The school was thus rendered a place of torture and terror. We have reformed matters in our own country considerably; but here, on visiting the public schools, I find you have much yet to do. You have no adequate provision for a supply of fresh warm air. Recollect, the air must be warmed before being let into the room. If you attempt to

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[1] American Lectures, edited by Boardman, pp. 310–18.

The need of thorough ventilation.

ventilate by throwing open the windows, you have the children near crying out that they are catching cold, and indeed much injury must ensue. Should there be now listening to me any member of the civic corporation, I would recommend this subject to his especial attention. He could not be more worthily employed than in effecting a reform. I know it is difficult to effect changes involving expense. The common cry of demagogues is economy, economy. They are for retrenching everything, and allowing money for nothing, hoping thus to gain favour with the people. Economy is a very good thing—no one can be a greater advocate of it than myself; but the economy which I recommend would extend to the health of the rising generation, and a small outlay for the attainment of this great end would never be regretted by a wise and philanthropic community.[1]

Having observed the unwholesome condition of the class-rooms, court-rooms, and other places of public resort in Boston, from want of ventilation, I called the attention of the audience strongly to the dependence of the mental faculties on the condition of the brain, for their power of action; to the dependence of the brain, for its vital properties, on the condition of the blood; and to the dependence of the blood on the condition of the digestive and respiratory organs: thus pointing out the direct connection between sound digestion, pure air, and mental vigour. I found that even a brief exposition of the structure and functions of the digestive and respiratory organs, and of their connection with the brain, illustrated by large drawings, brought home to the understandings of my audience the importance of digestion and ventilation to mental energy, and gave general satisfaction.

The effects of bad ventilation.

The ideas were by no means new to them; but, although they had often heard them stated by other lecturers, and had read them in books, it had occurred to few to carry them into practice. I, therefore, insisted largely on the evils which they inflicted on themselves and their children, by this neglect. Pulmonary consumption produces a large proportion of all the deaths that occur in New England, and I pointed out to them an obvious train of causes, in full operation, which lead to this disease. By breathing hot and vitiated air in ill-ventilated apartments, the blood is not properly aërated, the lungs are enfeebled, and the tone of the whole system, mental and bodily, is lowered. Nevertheless, in this condition, they make the most rapid transitions from a temperature of 70° or 75° of Fahrenheit's thermometer, which is common in their houses, churches, and lecture-rooms, to one of 5° or 10° degrees below zero, in the open air; a change sufficient to injure the respiratory organs in the most robust state of health, and much more so, when weakened by this previous injudicious treatment.[1]

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[1] American Lectures, edited by Boardman, p. 329.

personal
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My health was so imperfect that, although never unfit for duty, I was taken from the school on the 1st of July in each year and sent to sea-bathing. This interrupted the course of my school lessons, and if possible added to the inefficiency of the instruction there given. Moreover, profound ignorance of the relation between fresh air and the lungs, combined with the necessity for economy, led my mother to place four, sometimes five, children in one small room, in which also slept one of my elder sisters to take care of us. The room was on the ground floor, and the north wall and window were protected from the sea by a sloping buttress of large stones. There was also a window in the east, equally low. It was necessary to fasten the glass frames and barricade the outside shutters, to keep out the sea and thieves. The room door was locked, for it opened into a common passage. Here then we were shut up for the night in an air-tight box. I recollect well of awakening every morning very miserable. When the tide was full in the mornings, I used to be handed out at the north window, wrapped up in a shawl, and in a second or two plunged over head in the cold, clear sea. The shock to my feeble, exhausted, and excited frame was terrible; but there was so much vitality in me, notwithstanding all these evil influences, that a speedy reaction took place, and the skin glowed with a pleasing warmth. This, with breakfast and the open air all day, set me up again, and I struggled through the depression of the night; and, on the whole, was strengthened by the bathing. Not so my younger brother William, who, in bodily development, was greatly superior, although in cerebral development inferior, to me. When plunged into the cold water in the early morning, his system collapsed; his lips became blue, and he shivered all over. Nobody conceived the cause of these phenomena to be scrutable; but compassion saved William from the early bathing, for it was found that, by mid-day, he was able to stand the shock.[1]

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[1] America, vol. i. p. 212–13. For other personal experiences of the effects of bad ventilation, see the "Life of George Combe" by Charles Gibbon, vol. i. p. 6, *et seq.*

The circulation of the blood.

What we call the heart may, in fact, be considered as two hearts; a right and a left. By the right heart, the blood is sent to the lungs; by the left, to the arteries. But each of these consists of two muscular bags; and the circulation of the blood may be thus explained:—The heart has two vital properties, irritability and contractility, by the first of which, the stimulus of the blood is produced, and by the second of which, the muscular fibres of the heart shorten themselves, or, in other words, contract and close the cavity. The venous or dark blood is poured into the first sac of the right heart, called the right auricle; this, when filled, closes like a sensitive plant, and forces the blood into the right sac, called the right ventricle; the ventricle then contracts, and forces the blood through tubes into the lungs. Here the blood is vivified, and rushes to the left auricle, or first cavity of the left heart, which contracts and forces it into the second cavity, or the left ventricle; this contracts, and forces it into the great canal for the conveyance of arterial blood, whence it is distributed to all parts of the body, supplying nourishment. It returns through other tubes called veins, is received into the right auricle, and passes through the same route as before. The body contains, it is supposed, from twenty-five to twenty-eight pounds of blood, and two ounces pass through the heart at every beat; according to which, all the blood must pass through the heart every three minutes.

The conditions of nervous energy.

The brain is that organ which supplies nervous energy, or spirits, as we say, to all parts of the body; thus, if the nerve which communicates with the stomach be divided, digestion is at once arrested. Now, if, by any means, we continuously concentrate the whole nervous energy to any particular part, the other parts necessarily suffer. Thus, if by the occurrence of some great calamity, thought and feeling be kept in long-continued and inordinate activity, the digestive and respiratory functions are ill performed, the blood is deteriorated, and the body wastes and sinks with rapidity. So, if the muscular system be inordinately exercised, the nervous energy seems to be exhausted upon it; and if, after such exercise, we attempt to read or think, the brain is indisposed to activity, and we fall asleep. Without exercise, waste matter is not thrown off from the body in a proper manner, and the blood does not circulate with due force; but, if carried to excess, it interferes with our power of thinking and feeling with vigour and continuity.[1]

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[1] From George Combe's Autobiography, in his "Life" by Charles Gibbon, vol. i. p. 22.

The results of violation of the constitution: In the robust;

Some have received a favourably organised constitution, the greatest gift that Providence can bestow upon man. The mind is of proper size, the lungs are well developed, the digestive organs in good order. Persons so blest are very apt to laugh at the caution of others, and to keep in a constant blaze of excitement. They eat hearty dinners, rejoice in convivial suppers, and in punch and in wine. Warn them of their danger, they mock at your fears. But nature is keeping with them a reckoning. With some, she keeps a daily account, exacting punishment for every offence as soon as it is committed. With some, she keeps an account current, and she does so with the persons of whom I speak. It may be years before she exacts payment, but when she does so, she exacts the utmost farthing. Not one of their aberrations but is then found to have been a nail driven into the coffin. I cannot tell you how many young people I have seen start in manhood with fine, robust constitutions, and after the vigorous enjoyment of health for years, fall into premature graves, from attacks of apoplexy, paralysis, or some severe form of disease; while those whose weakly constitutions imposed the necessity of rest and watchfulness, outlived them.

In the intellectual.

There is a class of men in whom the brain predominates, and the lungs and digestive organs are comparatively weak. Such persons delight in mental activity; muscular exertion is disliked, and the brain is continually on the stretch of excitement. But when we reflect that, in thinking, we use the brain, just as, in walking, we use the muscles; and that, in order to keep the brain in activity, nervous energy must be drawn from the general system, all parts of which, under such circumstances, perform their functions feebly: the impropriety of this course is evident. The muscles will be weak and unenergetic, and the stomach will badly perform its duty.

Concentrated functions should not be simultaneous.

Two concentrated actions cannot go on in the system at the same time. If you digest well, you must think badly; if you think well, you must digest badly. The best plan is to spend an hour or an hour and a half in trifling conversation. If you talk nonsense, so much the better, as that needs no attention; and instead of that hour being counted as lost, it will, I assure you, be the best spent of the twenty-four. People say that they cannot spend the hour in such a way; business or professional duty or study requires their attention. But I answer that, if they go from the table to mental avocations, attention will be feeble, everything will be performed unenergetically; whereas, if they allow the hour for digestion, the brain, when they go to work, will be fresh and vigorous, and they will do more than if they had been at work all the time.

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[1] American Lectures, edited by Boardman, p. 319.

The importance of a healthy skin.

In Bilious and Nervous temperaments the skin is generally inactive. I have told you how great a quantity of matter should pass off by this organ; its inactivity is therefore very detrimental. To promote the secretion of perspiration, as well as the other secretions, nothing is more important than exercise, which should be taken in due quantity by every one. To keep the skin clean is of prime importance, and this may be done by sponging or washing the body daily. Perhaps the best wash for this purpose is composed of one-third vinegar and two-thirds water, or a mixture of common salt and water. After sponging the skin, it should be well rubbed with a coarse towel or hair glove.

The effects of a predominant digestive system.

There are some men in whom the digestive system predominates. These are what are called easy fellows, jolly companions. They live a very happy sort of life, so long as things go on well. They eat and drink heartily, enjoy pleasant, thoughtless conversation, and sleep soundly and long. But business is often neglected by them, and their easy, careless habits become a great source of trouble to all who may be dependent upon them for support. To correct this constitutional tendency, let the quantity of food be diminished; let what is taken, however, be solid and nutritious; and let plenty of exercise be taken in the open air. This course will give good stimulating blood, and consequently increase mental vivacity.[1]

The need of support to the back in school.

It is of importance when children are at school that their position should be easy. In Scotland, children have to support themselves on forms without backs. We have produced a reform, however, in a number of schools.

The benches in the High School [of Edinburgh, which George Combe attended] had no backs, but some of them stood close to the walls. I suffered greatly from inability to sit upright, during the long hours of confinement, on the seats away from the wall; and have no doubt that then and there the distortion of the spine was produced. I often abstained from getting up to the third "form," because the fourth stood next to the wall and supported my back.[1]

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[1] American Lectures, edited by Boardman, pp. 326–28. [2] *Ib.*, p. 335.

3. NOTES ON PHYSICAL EDUCATION, WITH SPECIAL REFERENCE TO WOMEN.[2]

Allow me to address some remarks to the ladies especially; and in doing so, we will make the skeleton the first object of contemplation.

The treatment of the bones in infancy.

The bones are formed by depositing bony matter in cartilaginous substance. In infancy comparatively soft, they go on hardening to old age. By disregarding their flexible nature in early life much deformity is occasioned. Ladies wish to see their children walk early. They put them to the feet before the bones are sufficiently strong; in this way, the legs are often distorted. Or they put leading strings around them to keep them up, and thus the ribs are pressed upon and deformed; pressure is produced, too, upon the stomach, liver, lungs, and other viscera, occasioning sad consequences. Nature, is in all these things, the sure guide. When the child feels the necessity for muscular exercise, it attempts to crawl about on all fours, and delights to tumble about the floor. This is the best form of exercise in the particular circumstances; it strengthens the little muscles of the child, which begins in a while to raise itself by the chairs, and finally to walk. All this is natural and safe, which the system of urging and dangling is not.

The treatment of the head in infancy.

I have before stated that, in the human skin, there are innumerable pores, from which waste matter is continually passing. Cleanliness is, therefore, another essential requisite in the treatment of children; but, as young children are susceptible to atmospheric changes, you must be careful not to expose them too much. I am told that, in this country, it is not usual to protect the heads of children, and that some physicians recommend this neglect. I cannot but consider this injurious. The temperature in this climate ranges, in a very short space of time, over an extent of forty degrees. Other parts of the body are protected, and why is the head exposed to such vicissitudes? The brain is a very important organ. In infancy, the skull is very thin, and there is very little hair. Some protection, therefore, seems necessary, though to stimulate the brain by too much clothing is injurious. Captain Parry relates that, on one very cold day, he sent two young gentlemen in search of a marine, who had been exposed to a temperature much below zero, without any adequate protection; and that so great was the effect even upon them, that when he sent for them into his cabin on their return, they looked wild, spoke thickly and indistinctly, and it was impossible to draw from them a rational answer to any of his questions. After being on board for a short time, the mental faculties appeared gradually to return with the returning circulation, and it was not till then that a looker-on could be easily persuaded that they had not been drinking too freely.

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[1] From George Combe's Autobiography, in his "Life" by Charles Gibbon, vol. i. p. 25. This use of forms without backs is still sadly common, even in the new schools now being erected. Some School Boards, and notably the London School Board, have acted rationally and kindly in this matter, and provided supports. Our medical men, with united voice, proclaim the evils of the old system. See, on this subject, Dr Liebreich's pamphlets, "School Life in its influence on Sight," and "A Contribution to School Hygiene" (London: J. & A. Churchill, New Burlington Street), and "The Public School; its Organization, Management, and Teaching," by the Editor (Edinburgh: Thomas Laurie), in which also an abstract of Dr Liebreich's principles is given in the Appendix.

[2] These notes are chiefly from George Combe's Lectures on Education delivered in America, in 1838–40.

The treatment of the spine:

One great evil to which the fair sex is liable is deformity of the spine. The spine or backbone is supported by many muscles which keep it erect, as a mast is kept erect by the ropes. If these muscles are compressed, they become weakened; if made to support the body for a long time in an erect, stiff position, they become exhausted; if this is persisted in, the spine gives way. But, as there is a natural tendency to equilibrium, the curve of one part is compensated by a curve in another, and thus, in such deformity, there is generally a double lateral curve, something like the italic letter *f*. When I was young, the remedy for this was to use a steel support. What would you think of me if I recommended, in order to strengthen the arm, that you should bind it in splints and keep it perfectly still for three months? You would see the absurdity at once, and yet the using of a steel support to the spine for the purpose of strengthening it was just as absurd. The only rational mode of strengthening the muscles is by exercise.

This exemplified in a special case.

When I was lecturing upon this subject some years ago in Edinburgh, a lady was present, who, on going home, noticed that her daughter, a young lady of nine years of age, had slight deformity of the spine. She became alarmed, and was led to think of the best course to be pursued under the circumstances. Seeing her cess renders the "human form divine" truly hideous. They laugh at the Chinese women, who attempt to amend God's handiwork by compressing their feet till they render them unfit to support them; but, by a blindness of perception which would be incredible if we did not witness it, they perform the very same operation on their own waists, and sap the sources of health and life. Surely God did not make their waist so imperfectly as to need their assistance to improve it. By this practice, the heart, lungs, stomach, liver, and other viscera are compressed to a most injurious extent, being cooped up so as hardly to be able to perform their functions. The circulation, too, is interfered with, as well as a large extent of exhaling surface. Yet, with all these pains, they only render themselves pitiable spectacles to all who possess correct taste. Not such forms do painters and sculptors take as the models of beauty.

The finest female form.

That form is best in which the brain, chest, abdomen, and limbs are all in due proportion. When any of these preponderate greatly in size, beauty suffers. Thus, if the abdomen is much larger than the rest of the body, we have a figure like a hog standing on its hind legs. The Creator has implanted in our minds a love of the beautiful, for a wise purpose; for it is found that beauty of form and perfection of healthy structure and action are most intimately connected. A female figure of the finest proportion for symmetry and beauty is, *cæteris paribus*, the most favourably constructed for healthy action. If the carriage of the body be erect, and the motions easy and graceful, these are indications that the bones are solid and the muscles energetic, that the blood is well nourished and well oxygenated, and that it circulates freely. If the countenance beam with intelligence and goodness, this is an indication that the moral and intellectual regions of the brain predominate; and that the individual, in birth and constitution, is one of nature's nobility.

The importance of the study of the Fine Arts to women.

I deem the study of the Fine Arts important. He who considers the beautiful human form as addressed to Amativeness alone or chiefly, takes a most degrading view of it. It is addressed to Ideality, which contemplates it with keen delight; to Veneration, as the chief of the Creator's physical works; and, to Intellect, it gives the highest pleasure. Viewed in this light, I see not only no immodesty, but the greatest propriety, in ladies visiting galleries of the Fine Arts. No better school can be selected for the mother, who, being thus made familiar with the most perfect and beautiful creations of the painter and sculptor, would carry in her mind standards which would enable her readily to detect deformity in her children, and lead her to seek timely remedial means. And I am disposed to think that, if ladies were instructed, in their youth, in the uses of the human frame, and taught to appreciate the conditions and proportions of the different organs that are most favourable to health and beauty; they would, when they were mothers, become far sooner aware of disorders in their children than they now are, and would save the lives of many of them. Who, for instance, after gazing at this painting of Eve at the fountain, could admire the spider waists? From being presented in its proper light, the study of the Fine Arts has, in the old country, become much more general. Ladies study the natural figures, and pass round the galleries where they are exhibited, without the slightest feeling of impropriety on their own part, or on that of any cultivated or correct mind.[1]

4. ON THE TEACHING OF ANATOMY AND PHYSIOLOGY.

Order of teaching Anatomy and Physiology.

A general outline of Anatomy and Physiology might be rendered very simple and yet useful. Teach,

First, the appearances and structure of each great organ;

Second, its functions;

Third, the effects of its under-action and over-action, or its diseases;

Fourth, the most common causes which produce its under-action and over-action, or which remove these; and

Finally, the mutual influence of the organs.[2]

In the lessons which I have given in John Watson's Institution in Edinburgh,[3] of which I am a Director, no subject has so much

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[1] American Lectures, edited by Boardman, pp. 321–26. Additional remarks on the importance of Physical education to Women will be found in the present work, p. 58.

[2] From MSS.

[3] George Combe was, for many years, one of the Governors of this Institution. In 1851, he first attempted to induce the Directors, a committee of the Governors who have more the immediate management of the Institution, to improve the school curriculum generally, and to introduce the teaching of Physiology. In November 1854, he was elected a Director; in December following, he was appointed chairman of a committee to examine the existing curriculum of the school, and to report as to the measures to be adopted for its improvement. A majority of the committee voted for the introduction of Physiology. From various unpleasant causes, George Combe resigned the convenership of the committee. On May 3, 1856, the Directors consented to

Order of teaching Anatomy and Physiology.

interested the children and made so deep an impression on them of the *reality* of the things taught, as the exposition of the Divine power and wisdom in the objects brought under their consideration. But, to do this *effectually* in Physiology, I have found it indispensable to enable them to understand :—

First, the structure ;

Second, the functions ;

Third, the relations of the structure and functions of each vital organ to the others, and also to the external world ; and

Fourth, the great fact that, in this world, everything, dead and alive, is an *agent*, producing results appointed by God, and, therefore, not to be evaded by man.[1]

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What Physical Education includes.

[The history of the progress of Physiology and Physical Education in schools, and the part taken in it by George Combe, from the earliest recommendations of it, till now when it is taught in many schools and fostered by Government, has already been given in Part Second, p. 102.

The subject of Physical Education is very much broader than the teaching of Physiology in schools. It should include Physical Cleanliness in all its bearings, Physical Development by training or exercise, and Physical Government, or the regulation of the bodily functions, according to the Laws of Health. For a brief exposition of its nature and aims, see "Physical Education for Common Schools" (Edinburgh, Thomas Laurie), and "Physical Education and Hygiene in Schools" (London, John Kempster & Co.), by the Editor.

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hold an examination of the senior children in the subject, after much solicitation by George Combe. But, from suspicion of the propriety of the subject, or fear of outside censure regarding it, then not uncommon, it was held in private, Sir James Coxe being the only outsider admitted ! George Combe thought it had been well taught. As a Director, he continued to exert himself to raise the condition of the children in diet, clothing, ventilation, &c., and succeeded in getting these greatly improved, though in the face of much opposition. See p. 105 of this work ; also other details of his connexion with John Watson's Institution, in the "Life of George Combe" by Charles Gibbon, vol. ii. pp. 318, 348, and 350.

[1] From letter to Mr Benjamin Templar, 7th May 1858. See p. 95 *et seq.* of this work, for additional suggestions on the kind of instruction recommended by George Combe, and the manner of its teaching ; also specimens of lessons, in Part Third, chap. v.

Ling's Rational Physical Education.

Physical Development should aim at a full exercise of the whole muscular system, by systematic, regular, and scientific training. The first scientific exposition of its nature, and of a system of exercises adopted for carrying it out, was given by the great Swede, Peter Henry Ling,[1] at the beginning of the century, under the title of "Rational Physical Education," which included not only the wise development of the healthy, but the cure of the diseased. This system, which was very fully worked out by himself, has been subsequently modified and improved by Rothstein and others in Germany, France, and America. It was first made known and advocated in this country, nearly thirty years ago, by Dr Matthias Roth, the great physical educationist and advocate of the Movement Cure, which is one application of Ling's system.[2] For an exposition of Ling's system and of Physical Education generally, see Dr Roth's various works, a list of which can be had from Baillière & Co, Regent Street, London, especially his "Gymnastic Free Exercises" (London, Groombridge); and Georgii's "Rational Gymnastics" (London, Baillière & Co.)

Text-books on Physical Education:

Happily, the whole subject in its various applications has received very great attention during late years, and numerous text-books on it now exist, of which the following may be named :—

On its nature and aims;

1. *For a general exposition of its nature and aims:* See the works already named; also Dr Roth's "Plea for the Compulsory Teaching of the Elements of Physical Education in our National Schools—or the Claims of Physical Education to rank with Reading, Writing, or Arithmetic" (London, Groombridge), earnest, forcible, and short; and Dr Caldwell's "Thoughts on Physical Education" (Edinburgh, Maclachlan & Stewart), which should be studied by all having to do with education; Dr Andrew Combe's "Principles of Physiology applied to the Preservation of Health" (same publishers); Professor Hodgson's "Two Lectures on Health and Wealth Educationally considered" (about to be republished); Dr Paget on the "Study of Physiology," in "Modern Culture," edited by Dr Youmans (London, Macmillan & Co.); Herbert Spencer on "Physical Education," in his "Education" (London, Williams & Norgate); Introduction and Appendix to "A System of Physical Education," by Archibald Maclaren of Oxford (Oxford Clarendon Press).

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[1] See a short account of Ling and his labours for Education and Health, in Dr Roth's "Gymnastic Free Exercises," Appendix (London, Groombridge).

[2] See p. 105.

2. *Works containing a System of Exercises for Physical Training:* Dr Roth's "Gymnastic Free Exercises by Ling, arranged by Rothstein" (Groombridge); "Gymnastic Exercises Without Apparatus, according to Ling's System" (London, Myers & Co.); and "Gymnastic Exercises on Apparatus" (London, Baillière); Maclaren's "System of Physical Education" (just mentioned); "The New Gymnastics for Families and Schools," by Dr Dio Lewis of Boston, U.S. (London, Tweedie); D. Cunningham's "Calisthenics and Drilling, simplified for Schools and Families" (London, Haughton & Co., Paternoster Row). On Physical Training;

3. *On Physiology and Anatomy:* For general use in schools—Mrs Bray's "Physiology and the Laws of Health, in Easy Lessons for Schools" (Longmans), one of the simplest, happiest, and most practical ever written, now, in the 3rd Edition, adapted to the Education Codes; Dr W. Foster's "Physiology" (Science Primers, London, Macmillan); "Animal Physiology," by John Angell[1] (Collins' Elementary Science Series); Dr M'Kendrick's "Animal Physiology" (W. &. R. Chambers); and other text-books issued by different educational publishers. On Physiology and Anatomy;

For more advanced study, and for the teacher—Huxley's "Elementary Lessons on Physiology," 9th Edition (London, Macmillan); Carpenter's "Principles of Human Physiology;" Dalton's "Treatise on Physiology and Hygiene," for Schools, Families, and Colleges (London, Sampson, Low, & Co.); Dr Draper's "Anatomy and Physiology;" Dr Cleland's "Animal Physiology" (Collins' Advanced Science Series).

4. *On Hygiene, or the Principles of Health:* Dr Edwin Lancaster's "Practical Physiology, a School Manual of Health" (London, Hardwicke & Bogue); Dr Edward Smith's "Health, a Handbook for Households and Schools" (London, Isbister & Co.); Mrs Bray's "Physiology and the Laws of Health" (already mentioned); Mrs Buckton's "Health in the House" (Longmans), simple, interesting, and practical; Dr Andrew Combe's "Physiology and Health," last edition, edited by Sir James Clark, an excellent book, never really out of date, which should be in the hands of every teacher; "Health for the Household" (London, Jarrold & Sons), containing very good and most practical matter, as also do other works by the same publishers called "Household Truths." On the Principles of Health.

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[1] Organiser of the Secular Schools in Manchester, now Senior Science Master in the Manchester Grammar School. See Part Third of this work, p. 245.

On Domestic Economy;

5. *On Domestic Economy*—a branch of this subject, of the highest practical value, which has recently received great attention, and is included in the Education Codes: Home Comfort, "A Complete Manual of Domestic Economy," and "Manual of Domestic Economy," by Jane Stoker (London, W. Stewart & Co.); "Domestic Economy for Girls," Edited by the Rev. E. T. Stevens (Longmans); "Lessons in Domestic Economy for Elder Girls," by Joseph Hassell; "Home and its Duties," by J. W. Laurie (Edinburgh, Thomas Laurie); and other Manuals issued by various educational publishers.

On School Hygiene.

6. *On School Hygiene*—a most important application of this subject to education, which should secure much more attention than it has: Dr Budgett's "School Hygiene" (London, Lewis), short, full, and practical; Dr Roth's "School Hygiene and Scientific Physical Education," a paper read before the Social Science Association (London, Baillière); "The Public School; its Organization, Management, and Teaching," by the Editor (Edinburgh, Thomas Laurie); Dr Liebreich's "A Contribution to School Hygiene," and "School Life in its Influence on Sight" (London, Churchill); "Health of Schools" (Boston, U.S., A. Williams & Co.), a series of superior papers read before the American Social Science Association, which has taken up this as a special subject, and done very good work in regard to it; "Sanitary Requirements in School Architecture," in the *Sanitarian* of New York (Trübner & Co., London), by Dr F. Lincoln, who has devoted special attention to the subject; Report of Committee of Board of Public Instruction, on the Sanitary Condition of the Schools (Philadelphia, E. C. Markley & Son); "School Architecture, being Practical Remarks on Planning, Designing, Building, and Furnishing School-houses," by Edward R. Robson, Architect to the London School Board (London, John Murray); "School Architecture, or Contributions to the Improvement of School-houses in the United States," by Dr Henry Barnard (New York, Charles B. Norton).

See a very good article on School Hygiene, in Kiddle & Schem's "Cyclopædia of Education," *s. v.* (New York, E. Steiger; London, Sampson, Low, & Co.)—*Edit.*]

CHAPTER III.

MORAL EDUCATION.

1. ON THE GENERAL PRINCIPLES OF MORAL TRAINING.

Moral Education comes first in the order of time;

THE faculties which produce the Propensities and Sentiments are earliest manifested in the order of nature, and therefore, a child is susceptible of Moral education before he is susceptible, in an equal degree, of Intellectual education. It is of importance to parents and teachers to attend to the fact, that the Feelings and dispositions of the mind depend upon innate faculties, as well as the Intellectual powers, and that the former faculties may be cultivated as well as the latter. The embryo Feelings of every kind (except two, Amativeness and Veneration) which distinguish the full-grown man, may be experienced by the child. A few years after birth, the individual will experience the same sensibility to fear, to censure and applause, and to justice, and the same natural tendency to fight, which will distinguish his character in future life. These Feelings may, in maturer years, be directed to other objects; but the power of experiencing them exists at both periods. The child who trembles at the threat of being shut up in a dark closet,—who exhibits to us with delight his new suit of clothes,—who fights about a marble,—or who covets his neighbour's top, is under the influence of the same faculties which, in future years, may make him tremble under the anticipation of a fall of stocks,—which may make him desire to be invested with a star and garter,—which may make him contend for an island or a kingdom,—or which may lead him to covet his neighbour's property.[1]

It should train to Self-command.

One test of civilisation, both in individuals and nations, is the power of Self-command amidst temptations; and a second is the capacity of discovering and following out through difficulties, the path that leads to ultimate good. In regard to the first test, it is a common remark in Scotland, that the sons of excessively rigid sons of clergymen occasionally run into wild immoralities when they are emancipated from paternal restraint. The explanation is, that their own Moral and Intellectual faculties have never been disciplined to resist and to control the solicitations of the Propensities amidst temptations. The restraining and directing power has been *external*; and good conduct depended on its presence. No youth is ever safe or well-trained unless these powers be *internal*; for then only are they ever present and ever at their posts. The same rule holds good in the case of nations.[1]

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[1] Essays on Phrenology (1819), p. 314.

Happiness dependent on Self-government.

Happiness consists in the free play of all our faculties within their legitimate spheres of action, and this kind of action can exist only when the animal Propensities are subjected to the control of the Moral Sentiments and Intellect, and where these latter powers are sufficiently enlightened to be capable of distinguishing between good and evil,—between the right course and the wrong,—in every department of individual, domestic, and social action. I earnestly press on your attention the great truth, that our effective faculties, both animal and moral, are in themselves blind impulses, and that they stand in need of constant guidance. There must be subordination, restraint, self-denial, the power of self-direction, in short, there must be *government*, and enlightened government, before happiness can be attained. Your institutions have done every thing to set your faculties free: But what have they done to guide them in the right path? So far as I can discover, the answer must be—too little.[2]

The training of the Moral faculties as curbs to the Lower.

We have not the power of preventing our Feelings, but we have the power of controlling them. They start into involuntary activity; it is for the Moral Sentiments to supply the curb. In most, the strength of their impulses needs to be lessened; and recollect that every day in which the Moral Sentiments are trained, the activity of the Propensities is diminished, just as, by using the right arm exclusively, we should diminish the powers of the left. In some cases, however, though not often, a particular Propensity needs cultivation, as Combativeness, for instance. This must be done by putting the child in a little danger, and by training it to meet the danger well.[3]

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[1] America, vol. iii. p. 269.

[2] America, vol. iii. p. 401.

[3] American Lectures, edited by Boardman, p. 341.

The Feelings distinct from the Intellect and earliest.

If the faculties which give Feelings are innate, and manifest themselves thus early, we are bound, by every tie of duty and affection, to direct these Feelings to their proper objects, and not to lacerate them by treating those who possess them, as if they had no Feelings at all. Many persons appear, by their conduct, to believe that a child cannot distinguish betwixt justice and injustice, when practised towards him; betwixt polite treatment and rudeness; betwixt the due exercise of parental authority and self-willed tyranny: because he cannot reason on abstract subjects. But such ideas are equally erroneous and disgraceful. The power of feeling depends on faculties different from those which produce intellectual manifestations; and although the child cannot reason so well, he can feel as acutely as his parents.[1]

They can be trained only through their exciting objects.

To present to the Moral Sentiments their appropriate exciting objects should be the first great aim of education. This is the only true mode to make children act well; precepts may do something, but they are feeble, indeed, compared with example. Would you have your child Benevolent? Engage it early in acts of kindness, and be yourself kind. Would you excite its Veneration? You must yourself be respectful in your demeanour, treat all with due consideration, and be attentive to the duties of religion. I saw a beautiful example of appropriate training in Philadelphia. A little negro girl went to a door to beg food. The servant gathered some together, and did not present it herself, but called a little child and permitted it to do so. In performing this act of charity, its countenance beamed with joy and goodness. As I looked upon the scene, it struck me that this would have more effect in training that child to the practice of Benevolence than ten lectures on the subject.[2]

Their training through Example explained by Sympathy.

It is necessary to cultivate the Feelings by the direct exercise of the faculties upon which they depend. Parents and guardians, therefore, ought to repress the manifestations of the lower Propensities in children when they are too energetic, and to call the faculties of the higher Sentiments into vigorous activity. The latter effect will be produced by the influence of example; because, by the law of social Sympathy, active manifestations in one individual excite the same faculties upon which the manifestations depend, into activity in the beholders.[1] Thus, if a parent or guardian manifest the faculties of Benevolence, of Conscientiousness, of Veneration, or of Acquisitiveness, strongly and habitually in the presence of a child, the same faculties will, by these acts, be cultivated and excited into permanent activity in the child. This is the true account of what the Metaphysicians call the Principle of Imitation in children. There is, no doubt, a faculty of Imitation, which gives the power of mimicry, and which unquestionably exerts an influence in disposing the child to imitate his seniors; but there is, besides, an identity of faculties, and a sympathetic influence arising from similarity of constitution, that make a child prone to do the acts which he sees done before him. Every child does not always do so, because the faculties are not, in every case, precisely the same in energy in every individual: and, of consequence, where the faculties of the parent differ from those of the child, the former may exhibit many active manifestations of particular feelings; but, from the primitive faculties which produce these feelings not being naturally powerful in the child, the parent may fail in impressing on him his own character.

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[1] Essays on Phrenology (1819), p. 315.

[2] From MSS.

Sympathy active in the lower as well as in the higher faculties.

As a general rule, however, for cultivating the Moral Powers, it may be safely laid down that, by a law of nature, the regular active manifestations of faculties in parents excite into habitual activity similar faculties in children. But this rule obtains in the faculties which are most prone to run into abuse, as well as in those of a higher order. A parent who inflicts personal chastisement often and in a rage, or who scolds loud and long, and shows little politeness, little benevolence, and little justice towards a child, cultivates in the latter the faculties which give rise to the emotions of rage and resistance (Combativeness and Destructiveness), and outrages the higher Sentiments just as effectually, or indeed more effectually, than if he were to frame and teach a catechism recommending rage and resistance as positive duties, and decrying justice and benevolence as dangerous and prejudicial. As a general rule, whatever you wish your child to be or to do, be that or do that to him. If you wish him to be outrageous, to be cruel, and to be quarrelsome, be outrageous, cruel, and quarrelsome to him. If you wish him to be humane and polite, be humane and polite to him. If you wish him to be just and pious, be just and devout before him.

This result arises not solely from a principle of Imitation leading him to do mechanically as you do. Such a principle would be

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[1] See the Law of Sympathy explained, p. 328.

This action of Sympathy distinguished from Imitation.

cold and lifeless. The result arises from sympathetic faculties in the child giving inward emotions and feelings corresponding to your own. These faculties are innate, permanent, and steady, and, when you have cultivated them, you can depend on the permanence of their effects. When you cultivate in children the faculties which feel Benevolence, Veneration, and Conscientiousness, you will make the feelings which attend the activity of these faculties known to them by experience; and these feelings are so agreeable in themselves that they will afterwards, without your superintendence, indulge the same faculties in active manifestations, for the sake of experiencing the inward satisfaction that attends their activity. But if you outrage all these faculties in your conduct to your children, and act towards them under the influence of rage, of deceit, of self-will, or of any improper feeling, you will excite into permanent and energetic activity the same faculties in them.

The Moral faculties best trained by self-action.

To cultivate the Moral Powers properly, it is not sufficient merely to excite their Sympathetic activity by the influence of example. To give them the full measure of cultivation, we must allow them to manifest themselves externally in actions as frequently as possible, or, in other words, we must allow them to produce actual effects. If we wish to cultivate the faculty of Benevolence to the best advantage, we must make our children the actual administrators of benevolence themselves. We must allow them to do acts of charity, and not merely to give alms, but to court acquaintance with poverty, misery, and distress in its bodily form, and to feel the sympathetic glow which can be experienced in its full fervour only when we see the objects of our charity in all their misery, but at the same time in "possession of all the feelings which unite them to us by the ties of a common nature." The case is the same with all the other faculties. If we wish to cultivate the faculty of Conscientiousness in children to the best advantage, we must accustom them to practise it, and administer it in acts. Constitute them judges of each other's conduct, teach them to award punishments or recompenses to each other, and let their awards always be fulfilled, unless they are extremely erroneous and absurd, which will rarely be the case. In the same manner, if a child has too little regard for property, and is too much disposed to bestow on others, without consideration, every thing which he happens to possess; endeavour to excite his desires ardently for some object, but do not allow him to obtain it till he has performed a quantity of labour as the purchase of it, and then his faculty of caution will be more ready to restrain his generosity, when he has learned the difficulty of acquiring.[1]

This illustrated by prison discipline.

There is only one way of strengthening faculties, and that is by exercising them; and all the American prisons which I have seen are lamentably deficient in arrangements for exercising the Moral and Intellectual faculties of their inmates. During the hours of labour, no advance can be made beyond learning a trade. This is a valuable addition to a convict's means of reformation, but it is not all-sufficient. After the hours of labour, he is locked up in solitude, and I doubt much if he can read for want of light; but, assuming that he can, reading is a very imperfect means of strengthening the Moral Powers. They must be exercised, trained, and habituated to action. My humble opinion is, that in prisons there should be a teacher of high moral and intellectual power for every eight or ten convicts; that, after the close of labour, these instructors should commence a system of vigorous culture of the superior faculties of the prisoners, excite their moral and religious feelings, and instruct their understandings. In proportion as the prisoners give proofs of moral and intellectual advancement, they should be indulged with the liberty of social converse and action for a certain time on each week-day and on Sundays, in presence of the teachers; and in these *conversaziones*, or evening parties, they should be trained to the *use* of their higher powers, and habituated to restrain their Propensities. Every indication of over-active Propensity should be visited by a restriction of liberty and enjoyment; while these advantages, and also respectful treatment and moral consideration, should be increased in exact proportion to the advancement of the convicts in morality and understanding. By such means, if by any, the convicts would be prepared to enter society with their higher faculties so trained and invigorated as to give them a chance of resisting temptation, and continuing in the paths of virtue.

In no country has the idea yet been carried into effect that, in order to produce moral fruits, it is necessary to put into action moral influences, great and powerful in proportion to the *barrenness* of the soil from which they are expected to spring.[2]

The cultivation of the Intellectual faculties is of great importance in directing the faculties of the Propensities and Sentiments in the proper mode of their gratification; but I am obliged to observe that the cultivation of the Intellect, where the higher Sentiments are not equally cultivated, has less effect in leading to morality than is generally supposed. On observing mankind, I find individuals in whom the faculties of the higher Sentiments are naturally powerful, exceedingly moral, although their Intellectual powers are often slender; and I find individuals, whose faculties of the higher Sentiments are weak, often exceedingly immoral, although their Intellectual powers are remarkably strong. I observe that the individuals in whom the faculties of Cautiousness, Conscientiousness, Benevolence, Veneration, and Firmness are energetic, either from natural endowment or much cultivation, are generally prudent, honourable, and virtuous, although possessed of very different degrees of intellectual power. I find, on the contrary, individuals in whom these faculties are weak, selfish, illiberal, and unjust, even although adorned with the most splendid intellectual capacities.[1]

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[1] Essays on Phrenology (1819), p. 320.

[2] America, vol. ii. pp. 19 and 20.

The influence of the Intellect in Morality: Less than generally reckoned;

But of the highest importance in Training.

But under the present system, Moral and Religious instruction is directed too exclusively to the Sentiments. We impress precepts of duty to God and man upon children; in other words, enjoin them to exercise Benevolence, Veneration, Conscientiousness, as duties which are highly proper, but (and this is an imperfection) we give them extremely little intellectual information concerning the reasonableness and advantage of doing so, or concerning the *means* or manner of accomplishing the objects which we represent to them as duties to be fulfilled. It is for want of a Philosophy of Mind that we are so lame in these particulars.

This illustrated by a common precept.

For example, nothing can be more admirable than the precept, Love thy neighbour as thyself; but how difficult it is to the mind in an unenlightened condition to conceive of this as really practicable! If every man is pursuing his individual interest, how is this to be attained? Even if its practicability is admitted, as a matter of faith or duty, out of deference to the authority of Him who issued the injunction, how prodigiously difficult is it to carry it into effect, while we are ignorant of the proper mode of attaining true happiness either for ourselves or our neighbours! It appears to me that the practicability of the precept is capable of demonstration from the elements of the human mind and their relations.

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[1] Essays on Phrenology, (1819), p. 332.

The importance of the Intellect in Moral training illustrated.

It is impossible for human beings to be happy alone, or amidst the misery of their fellows. If, for instance, no individual can exercise the Organic, Moral, and Intellectual faculties conferred on him in their due degrees alone, without the presence and aid of his fellows; if his Intellect cannot flourish amidst dull and stupid associates; if his Benevolence, Veneration, and Conscientiousness cannot enjoy the delights of their constitution amidst ferocious, blaspheming, and dishonest knaves; and if the Propensities, when untamed and unregulated, would lead individuals to destroy each other: it becomes clear that not one of us can more effectually gratify his love of himself if, by these words, we mean the promotion of his own real happiness, than by improving the moral and intellectual condition of his neighbours. By doing so, we shall raise our neighbours in the scale of rational existence, and most persons will admit that, if the great majority were enlightened in regard to these principles, and would combine to carry them into effect, they might be rendered practical. Now, in such a state of society, we could "love our neighbour as ourselves" literally and truly, because our interests and enjoyments would be compatible with his. In short, in place of starting in life under the notion that our fellow men are our rivals, whose interests are opposed to ours, we should see clearly that, as God is good and just, He has constituted the human mind and body and the external world in principles exactly opposite to selfishness—namely, in such a way as to admit of the welfare of all simultaneously; indeed, so as to render the happiness of our neighbour an ingredient in our own, and in harmony with His own precept, Love thy neighbour as thyself.

The influence of Physical and Mental Science on Moral training.

Now, it is by becoming acquainted with the physical and mental nature of man, and its relation to external objects, that it becomes possible to form institutions of society, and adopt habits of life, that will conduce to the real enjoyment of our own existence, and render our neighbours as happy as we; and it is only by diffusing this knowledge through society that the end of improvement can be gained. All that we can at present do is to point to the promised land, to pave the way through the wilderness, to beck on our fellow men to enter upon the path that will ultimately lead out of it. And the young are the grand objects on whom our instructions ought to be most sedulously lavished. Let them perceive early that they have received a rational nature, and point out to them the grand objects at which it aims, and that these are to be reached only by the cultivation of their moral and intellectual powers.

There exists natural appetite for this knowledge.

This leading principle being pointed out to children and young persons, they will be able to conceive the *utility* and advantage of studying the various branches of natural science related to their faculties. They will see that it conduces to the advantage of their rational nature. Under the present system, it is extremely difficult to enable children to conceive the benefits of education.

If that knowledge shall be communicated in due measure, not over-exhausting the physical frame, as at present, by long hours of mental application, and if it shall really be part of nature's stores, their minds will desire it as their appropriate food, just as much as a healthy stomach desires physical aliment. If the individual is either confined from all muscular exercise, or doomed to great exhaustion of toil, he will feel no appetite for food for the stomach: if, like children at school among the lower classes, he is over-tasked in learning, and the things taught are ill suited to his nature, or if, as in the case of the lower orders, he is over-exhausted by mere bodily exertion; he will experience little appetite for intellectual food. But the errors here are in the treatment, and the want of appetite ought not to be charged on the constitution of the stomach and the mind.[1]

The Intellec should be trained to regulate the Impulsive faculties.

One general defect in the mental condition of all of us is, that in ten instances we act from impulse and habit, for once that we do so from reflection. This arises from imperfect training in youth. Our Impulsive faculties, being early developed, and possessing great natural energy, are constantly liable to err and to lead us into evil, when not controlled and directed by enlightened intellect. One object, therefore, in teaching the young should be *to communicate knowledge*, and another to *train* the Propensities and Sentiments to submit to the control of the Intellect. In the United States, Training is needed above all things: for the public institutions of the country, in fostering a spirit of independence, encourage the young to rely on themselves; in other words, to act from the impulsive elements of their nature, much more than from reflection. Reflection, when founded on knowledge, produces habits of self-denial, self-restraint, and obedience. The want of this practical training and discipline is seen in the males, in the recklessness with which they dash into speculation and adventure, pursuing their leading impulses at all hazards; and in the females, in the pertinacity with which they adhere to practices which they know to be injurious to health, and in their deficiency of mental resolution to submit to the temporary sufferings which always accompany a change of evil habits.

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[1] From MSS.

If the conductors of seminaries would require their pupils to recapitulate, once a week, what they *do* in obedience to the laws of health, and *train* them for two or three years to the practice of these laws, they would form habits that would last during life, and thus render the knowledge which they communicate effectual.[1]

Men classified according to the relations of the Feelings and Intellect.

Men may be divided into three classes. First, those in whom the Moral Sentiments and Intellect naturally predominate over the Animal Propensities. Individuals so constituted are in very little danger from temptation, and may be excluded in the present discussion. Secondly, those in whom the Animal Propensities naturally preponderate over both Sentiment and Intellect. These are the men who sink into vice in whatever situation they are placed, who degrade themselves with habitual indulgence in animal pleasure, and, so far as our observation extends, if placed in the country, they become a focus of corruption to others; whereas, in a town, they are swallowed up in the gulf of pre-existing iniquity. Thirdly, those individuals, and they form the great majority of mankind, in whom the Propensities are naturally so balanced against the Sentiments and Intellect, that external circumstances will cast the balance to vice or virtue.

The training of those having equally balanced faculties.

This is the most important class. The object to be attained in educating them is, to induce them habitually to restrain and regulate the Animal Feelings, and exercise and manifest the Moral Sentiments and Intellect. To accomplish this end, every situation calculated unduly to excite the Propensities must be avoided, and every circumstance that tends to call forth the Sentiments and to exercise the Intellect ought to be encouraged. The question then occurs Does a secluded seminary, or a retired village, afford fewer temptations to vicious indulgence than a city? Mr Campbell,[2] we think has answered this successfully. "Granting," says he, "the college proctors whom you appoint to be the strictest and most conscientious still, how poor is a proctor's influence to a father's, to a mother's and to the purity of conversation ensured by the presence of sister and respectable friends!" In short, in situations where boys live closely congregated, and removed from the influence of ordinary society, one individual of a corrupt mind may produce great contamination; and it is well known that retired seminaries are, in fact, selected as places of reform for all depraved and spoiled children of the community, whose dispositions render them nuisances at home. In these institutions, therefore, there are always some individuals of bad natural dispositions, who come into the closest communication with those who are ready to yield to the first impression.

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[1] America, vol. ii. pp. 128–9.

[2] In "Suggestions Respecting the Plan for a University in London," by Thomas Campbell, the poet, written in 1824–5, of which the above is a review

The importance of home influences in education.

But, farther, all the powers of the mind possess natural activity; and it is highly erroneous to imagine that boys whose mental organs are equally balanced, and whose case we are now discussing, will naturally be pure if not contaminated by evil example. On the contrary, their Animal Propensities will engender vice in the most retired situation, unless prevented. And how are they to be prevented? By exciting highly and habitually the Moral Sentiments and Intellect. We require only to contemplate those powers for a moment, to be able to decide what situation is best adapted for their exercise. They are, Benevolence, Veneration, Conscientiousness, Hope, and Ideality; and these may be aided by Adhesiveness and Love of Approbation. Allow, then, that the Intellect is equally well cultivated in a retired seminary and in a college situated in a city. Whether is the bosom of a virtuous family, or the chambers of a great school, best suited to keep in habitual exercise the Sentiments here enumerated?

The pleasures of the higher faculties all-important in training.

There can scarcely be a shade of difference in opinion on the subject; and it ought always to be remembered that it is only by carrying the mind upward, and leading it to expand its powers, and *reap its enjoyments*, in the department of morality and intellect, that the Animal Propensities can possibly be restrained and regulated. Mr Campbell, in adverting to the case of sailors and Turkish women, gives a convincing commentary on the success which attends attempts at curbing the lower instincts by mere physical restraint,—that is, by merely rendering the natural gratification of them impossible, without providing *countervailing enjoyments* for the mind.

The principle of leading the mind from vice and to virtue by *pleasure* is scarcely at all understood, and nevertheless it is essential to the success of all plans for the improvement of the species.[1]

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[1] *Phrenological Journal*, vol. ii. (1824–5), p. 438.

The play-ground as a theatre of Moral training.

In Wilderspin's system of Infant Education, the playground is looked upon as the theatre of Moral Training. There the older children are trained to be kind and affectionate to the younger. Every deviation from Benevolence and Conscientiousness, every outbreak of passion or manifestation of selfishness, is made a matter of inquiry. Nothing, in fact, is considered too insignificant for such investigation. This is conducted openly, the children being the jury. They rarely fail to take a just view of the matter and give a just award. It is perfectly delightful to see the effect of this training. Temptations are not removed but presented; and, though many of the children are taken from the very lowest ranks of society, and some have not sufficient food, yet the dinners of their more fortunate schoolmates, the currants, gooseberries, pears, and apples in the playground, are all safe as if under lock and key. In Britain, there are parents so poor that they have to send their children to school without dinners. This is made a means of cultivating the Benevolence of the more favoured, who make up a dinner out of theirs for the little unfortunates.[1]

The influence of Female teachers in Moral training.

The employment of female teachers is new in the boys' schools of America, and it has been found to answer well. The young women treat the boys with a kindly interest, obviously influenced by sex, and the feeling is reciprocal. The boys, when studying under the young women, are more gentle and refined in their manners than when taught by male teachers, and they perform their tasks more obviously from a desire to please. This is as it should be. There is nothing necessarily indelicate or improper in the feelings of the sexes towards each other. Indeed, I have heard ladies of the strictest principles and the most refined delicacy, acknowledge that they were conscious of receiving an additional stimulus to exertion from the influence of a teacher of the opposite sex. There is no reason why this excellent ordination of nature should not be employed to promote the training and instruction of the youthful mind.[1]

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[1] American Lectures, edited by Boardman, p. 345. See p. 322, note 2, regarding Wilderspin's System. The importance of the playground, rightly utilised, as an educative field, cannot be overstated. As is well said by James Simpson (see the Introduction and p. 201, *et seq.*), "*Here* is the true infant school; the schoolroom is but an accessory. In the playground are acquired cleanliness, cheerfulness, health, activity, and resource; and social affections are exercised and practised." See his "Philosophy of Education," Appendix No. 1, where some very good illustrations are given of the right use of the playground. Its importance was fully recognised and acted on by Stow, who has happily and truly designated the playground as "the uncovered schoolroom." See his "Training System."

2. NOTES ON THE TRAINING OF SPECIAL MORAL FACULTIES.

Destructiveness: Its wise direction.

A boy, who was extremely mischievous, was sent to the Blind Asylum at Boston in America, as a pupil. He was so full of destructive energy that he broke the benches, tore the chairs asunder, swung on the doors till he wrenched them off their hinges, and perpetrated all sorts of mischief on frangible objects; while he was so restless, that he was incapable of bending his attention to books. Dr Howe reasoned with him, appealed to his Moral Sentiments, and did everything in his power to improve his habits by means of moral suasion, but with little success. He was satisfied that there must be causes for these dispositions, and endeavoured to discover them. He observed that the boy

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The influence of Sex in Education.

[1] America, vol. ii. p. 42. The influence of the Sexes on each other in Education is a most important subject, deserving greater study than it has yet received, though it begins to gain more attention. It was one on which George Combe laid increasing importance after his return from America in 1840. Mr Bastard, a great friend of George Combe's (see p. 247), writing to the editor in regard to it, says, "The more I reflect on the co-education of the sexes, the more I regard it as *the* great reform in Education, which *will* be made, even up to carrying it out in the Universities themselves. I believe it to be an immense mistake, in all institutions, whether moral or social, from the infant school to the college, in scientific associations, clubs, and social gatherings of all kinds, to separate the sexes. I have never had any doubt about it since George Combe, after his return from America, where, he told me, he first had his attention particularly drawn to the joint-education of children, explained to me, physiologically, the advantages it affords. I cannot, without much thought, fully recollect all the reasons he gave, but I think they were based chiefly on Sexual Sympathy, and the disposition it engenders *not* to oppose each other. This leads the rough boy to be gentle to the girl, and to receive instruction and even reproof from a female teacher, that he would not, without some spirit of opposition, from a master; and, on the part of the girl, it leads her to yield without question, to what looks like the strength of the boy; and, farther, in opposition, to use a softness which the male has a difficulty in withstanding. Finally, these sexual principles pervade human life and should always be borne in mind." One of the most valuable contributions to the subject is "The Education of Girls and the Employment of Women" (London: Trübner & Co., 1869), by Professor Hodgson. It is also very well put in "The Co-Education of the Sexes," by the Rev. James H. Fairchild, D.D., of Oberlin College, U.S., copies of which, price 2d, may be had from the principal booksellers in Edinburgh. See also pp. 67 and 68 of the present work, for other contributions to the same subject.

Destructiveness: Its wise direction;

had large lungs, and a high Sanguine Temperament, which gave him great strength and restless activity; also large organs of Destructiveness, that prompted him to exert those qualities habitually in injuring the objects around him. He thought of providing him with a legitimate field for the exercise of his dispositions. He sent him into the cellar every morning, for three hours together, to saw and split wood for the use of the institution. This exercise had the desired effect. After undergoing it for some time, he became quite willing to sit still in school and receive instruction with the other boys; and the benches and chairs were safe. The boy himself was delighted with the change, and soon sawed and split up all the wood in the cellar. He was then set to running, leaping, climbing poles, and disporting himself in various ways, in the gymnasium of the institution; and Dr Howe found that so long as a legitimate and adequate vent for his excessive muscular energy was provided, he conducted himself with propriety, and was capable of mental application.[1]

Its hurtful manifestations.

Some children think it a capital practical joke to make a companion strike hard on a soft substance with the point of a concealed pin sticking up in it; or they ask to shake hands, and pinch with the nail of their thumb till the blood spring; or they give a hot object that will burn into the hand, and laugh heartily at the pain produced. This results from Destructiveness and Secretiveness, and is quite unintelligible as a source of pleasure to children in whom Conscientiousness and Benevolence are large. It indicates selfishness, finding gratification in cruelty, and ought to be represented to the child as odious and immoral, and to be checked by every means.[2]

Combativeness: Its characteristics;

When Combativeness is very large and active, it gives a hard thumping sound to the voice, as if every word contained a blow. Madame de Staël informs us that Bonaparte's voice assumed this kind of intonation when he was angry; and I have observed similar manifestations in individuals whom I knew to possess this part of the brain largely developed. When predominant, it gives a sharp expression to the lips, and the individual has the tendency to throw his head backwards, and a little to the side, in the direction of the organ, or to assume the attitude of a boxer or fencer. When the organ is small, the individual experiences great difficulty in resisting attacks; and he is not able to make his way in paths where he must invade the prejudices or encounter the hostility of others. Excessively timid children are generally deficient in this organ, and possess a large Cautiousness. I conceive the extreme diffidence and embarrassment of Cowper the poet to have arisen from such a combination; and in his verses he loathes war with a deep abhorrence. Deficiency of Combativeness, however, does not produce fear, for this is a positive emotion, often of great vivacity, which cannot originate from a mere negation of an opposite quality. Combativeness is generally more developed in men than in women, but in the latter it is sometimes large. If it predominates, it gives a bold and forward air to the female, and when a child she would probably be distinguished as a romp.

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[1] America, vol. i. 217–8. See p. 122, regarding Dr Howe. The above anecdote, told him by Dr Howe, was frequently used by George Combe, he tells us, as an illustration in his lectures.

[2] From MSS.

Its exhibition in fighting;

Dr Parr was the admirer and advocate of pugilistic encounters among the boys who were his pupils; and he defended the practice by the usual arguments, such as the exercise of a manly and useful art, calculated to inspire firmness and fortitude, and to furnish the means of defence against violence and insult. It was amusing to hear him speak of the tacit agreement which subsisted, he said, between himself and his pupils at Stanmore, that all their battles should be fought on a certain spot, of which he commanded a full view from his private room, as thus he could see without being seen, and enjoy the sport without endangering the loss of his dignity. It is mentioned that his hind head was remarkably capacious.

In private life.

Persons in whom the Propensity is strong, and not directed by superior Sentiments, are animated by an instinctive tendency to oppose every measure, sentiment, and doctrine advocated by others; and they frequently impose upon themselves so far as to mistake this disposition for an acute spirit of philosophising, prompting them to greater rigour of investigation than other men. In society, it is useful to know the effects of this faculty, for then we can treat it according to its nature. When we wish to convince a person in whom the organ is large and Conscientiousness deficient, he will never endeavour to seize the meaning or spirit of our observations, but will pertinaciously put these aside, catch at any inaccuracy of expression, fly to a plausible although obviously false inference, or thrust in some extraneous circumstance, as if it were of essential importance, merely to embarrass the discussion. Individuals so constituted are rarely convinced of anything; and the proper course of proceeding with them is, to state our proposition clearly and then drop the argument. This, by withdrawing the opportunity for exercising their Combativeness, is really a punishment to them, and our views will have a better chance of sinking into their minds, unheeded by themselves, than if pertinaciously urged by us, and resisted by them, which last would infallibly be the case if we showed anxiety for their conversion. A good test for a combative spirit is to state some clear and almost self-evident proposition as part of our discourse. The truly contentious opponent will instinctively dispute or deny it; and we need proceed no further.[1]

Cautiousness: its general manifestations;

Cautiousness is almost uniformly large in children, and appears, from this circumstance, to be developed at an earlier age than many of the other organs. This is a wise provision of nature, as caution is never more indispensable to the safety of the individual than during the helpless years of infancy and childhood. Children possessing a large endowment may be safely trusted to take care of themselves; they will rarely be found in danger. When, on the other hand, the organ are small in a child, he will be a hapless infant; fifty keepers will not supply the place of the instinctive guardianship performed by adequate Cautiousness. In a boy of six years of age, it was very small, and he took off his clothes to leap into an old quarry full of water to recover his cap, which the wind had blown into it, totally insensible to the danger, which was imminent, of being drowned. In some very young children, the organs are so prominent as to alarm mothers with the fear of disease or deformity. Water in the head, indeed, frequently shows itself by an enlargement of this part of the skull, but it is not uncommon for unskilful persons to mistake a natural and healthy development of the organ in question, for an indication of that malady.

When deficient;

In mature age, when the organ is very deficient, the individual is rash and precipitate. He is never apprehensive about the results of his conduct, and often proceeds to act without due consideration. Persons of this description are frequently of a gay, careless disposition, and engrossed entirely with the present; they adopt rash resolutions, and enter upon hazardous enterprises without deliberation or advice. In domestic life, misfortunes overtake them in onsequence of their want of precaution. From constitutional reck-essness, they precipitate themselves against objects in the dark; hey break frangible articles, owing to a want of precaution in rranging them; and lose the money which they lend, by omitting o take proper security for repayment. Riding upon a slippery path, uite insensible to danger, their horse falls and deprives them of ife. A cat, or other animal, overturns the candle which they have eft burning, and sets their house on fire. In short, they are subject o interminable misfortunes, through want of caution in their onduct.

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[1] System of Phrenology, vol. i. pp. 250–1.

When combined with other faculties;

This faculty produces a repressing influence, and, in estimating its ffects, the faculties with which it is combined should be kept in iew. An individual with large Acquisitiveness and Self-esteem, hich produce instinctive selfishness, was pointed out to me as emarkably careful of his own interest, although the organ of autiousness was deficient in his head. It was admitted, however, hat his prudence consisted chiefly in resisting solicitations to per-orm generous actions, and to enter into suretiship; but that, when tempting prospect of gain was held out to him, although attended with great risk, he was liable to dash into the adventure, and in onsequence frequently sustained severe losses. His natural dispositions rendered him little prone to excessive generosity, and in that respect no danger awaited him; but if Cautiousness had been large, it would have kept him alive to the perils of speculation, and prompted him to prefer small and certain profits to the chances of great but uncertain gain.

When largely developed.

Extreme and involuntary activity of this faculty produces internal sensations of dread and apprehension, highly distressing to the individual, although often very ridiculous in the eyes of ignorant spectators. Many persons believe that the Feelings of the mind depend upon the dictates of the Understanding, and that individuals, if they would allow themselves to be convinced of the groundlessness of their apprehensions, might, by an act of volition, remove the terrors which oppress them. Such notions argue great ignorance of human nature. As easily can we remove a pain from the leg, by resolving to be quit of it, as can the unhappy sufferer under diseased Cautiousness dispel the mental gloom by which he is afflicted.[1]

Benevolence.

The activity of Benevolence is productive of so much benefit in society, that its cultivation ought to be specially attended to in the training of children. The experience of the teachers of Infant schools shows how much may be done in adding to its energy.[1]

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[1] System of Phrenology, vol. i. pp. 273–5.

Good Taste: its cultivation.

As Good Taste is the result of the harmonious action of the faculties, we are able to perceive why Taste is susceptible of great improvement by cultivation. An author frequently reasons as profoundly, or soars as loftily, in his first essay, as after practice in writing for twenty years; but, at the outset of his career, he rarely manifests the same tact which he subsequently acquires by study and the admonitions of a discriminative criticism. Reasoning depends on Causality and Comparison, and lofty flights of imagination on Ideality; and if the organs of these faculties be large, they will execute their functions intuitively, and carry the author forward, from the first, on a bold and powerful wing; but as Taste depends on the balancing and adjusting, the suppressing and elevating, the ordering and arranging of his thoughts and emotions, so as to produce a general harmony of the whole, it is only practice, reflection, and comparison with higher standards, that will enable him successfully to approximate to excellence; and even these aids will suffice only when the organs are by nature combined in pretty equal proportions, for if the balance preponderate greatly in any particular direction, no effort will produce exquisite adjustment.[2]

Order.

The mode in which a person is trained in youth has a marked influence on the activity of Order. If brought up by regular and orderly parents, the individual will be much more distinguished by the same qualities than if his early years had been spent in the midst of disorder and dirt.[3]

Music: the choice of words.

Singing relieves the monotony of the other studies, affords gratification to the children, and serves to cultivate a taste for refined and innocent pleasure. In one school I visited in America, the children were requested to sing, and to select their own song. They chose

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[1] System of Phrenology, vol. i. p. 396. See *Phrenological Journal*, vol. vi. pp. 129, 428—(G. C.), where some good remarks on the cultivation of this and other Sentiments will be found. Some very good examples of the training of the Sentiments in Infant Schools are given in Appendix No. I. to James Simpson's "Philosophy of Education."

[2] System of Phrenology, vol. ii. p. 281. [3] System of Phrenology, vol. ii. p. 92.

"I love my native land," and sang it with great zest and good execution. The sentiments savoured a good deal of Self-esteem, like the patriotic songs of Old England. I was glad to observe, however, sentiments of Benevolence and Justice towards other nations introduced into the last verse.[1]

Profane language in schools.

I visited also the "Hawes Common School" in South Boston, and found one peculiar institution. The children have been formed into "An Association for the Suppression of Profanity," which the teacher said had been eminently successful in banishing not only oaths, but rude language and violence from the school. The organisation of the Association is very similar to that of a temperance society. It has a president, vice-president, secretary, and a standing committee, elected every three months. "The members of the society," the teacher says, "wish to begin life with fair prospects. We believe it to be important to gain the mastery over our tongues; and to aid us in so doing, to excite us to watchfulness, we have formed this Association." "The society has a pledge which its members sign, and a constitution by which all its proceedings are regulated." Article 5 of the constitution provides, that "any member who shall be known to be guilty of profanity may be indicted by the standing committee, and expelled or suspended, or otherwise punished at the discretion of the society." Article 6, "Profane swearing shall be divided into two classes. In the first class, there shall be comprehended the use of the name of 'God,' or the 'Saviour,' together with that of 'damn' or its compounds, and 'hell' and its compounds. In the second class, shall be included all other words which may indirectly come under the title of profane, such as 'curse,' 'devil,' and their compounds, of which the society shall judge." The form of initiation is not published. This society, in addition to its moral influence, trains children to the practice of public business, an object of importance in a country where every man, after attaining twenty-one years of age, becomes an influential member of the social body.[2]

The preservation of school books.

I visited a private school for Greek, Latin, arithmetic, geography, drawing, &c., taught by Mr James in Market Street, Philadelphia. The arrangements and modes of teaching seemed remarkably good,

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[1] America, vol. i. p. 160.

[2] America, vol. i. pp. 170–1.

The preservation of school-books.

but the circumstance which struck me most, as being new, was Mr James's method of preserving the school-books from destruction; the use of which is included in the school-fees. He covers the books with cotton cloth, and enjoins care of them on the boys. To give efficacy to this injunction, he withdraws every book immediately on perceiving the slightest tear or stain on it, sacrificing it altogether, and substituting one clean, new, and perfect, in its place. This practice stimulates the boys to preserve their books, those among them who are naturally careless becoming ashamed of the frequent renewals which they render necessary. He mentioned that he had found that, when the books continued to be used after being soiled or torn, however little, they all made a rapid progress to decay; but that, by requiring them to be kept constantly in a high condition, the waste is surprisingly small.

The principle involved in this practice is capable of being extensively applied. Erect a high, but still an attainable standard, in manners, cleanliness, and moral deportment in schools, and the children will work up to it with greater earnestness and success than many teachers believe.[1]

3. ON THE USE AND ABUSE OF EMULATION IN EDUCATION.

Love of Approbation: Too much appealed to;

Love of Approbation is too much cultivated in education, by being almost universally appealed to as the chief stimulus to exertion and good behaviour. In Infant schools, however, conducted on Mr Wilderspin's plan, prizes and place-taking are dispensed with, and the result is most satisfactory. It is only where the subjects of study are unsuitable to the minds of children, or improperly taught, that Love of Approbation requires to be strongly appealed to.[2]

Combined with Secretiveness large, and Conscientiousness deficient, Love of Approbation prompts its possessor to pay to others those unmeaning compliments which pass current in society, and which most persons receive well when addressed to themselves, but treat with ridicule when bestowed lavishly on others. When its development is excessive, while the regulating organs are deficient, it is the cause of great unhappiness. It renders the little girl at school miserable, if her dress and the style of living of her parents are not equal to those of the parents of her associates. It overwhelms the artist, author, or public speaker with misery, if a rival is praised in the journals in higher terms than himself. A lady is tormented by perceiving, in the possession of her acquaintance, finer dresses or equipages than her own. It excites the individual to talk of himself, his affairs and connections, so as to communicate to the auditor vast ideas of his greatness or goodness; in short, vanity is one form of its abuse. "Sir," says Dr Johnson, "Goldsmith is so much afraid of being unnoticed, that he often talks merely lest you should forget that he is in the company." When not combined with Conscientiousness and Benevolence, it leads to feigned professions of respect and friendship, and many manifest it by promises and invitations never intended to be fulfilled or accepted. It, as well as Self-esteem, prompts to the use of the first person; but its tone is that of courteous solicitation, while the *I* of Self-esteem is presumptuous and full of pretension.

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[1] America, vol. ii. p. 58.

[2] *Phrenological Journal*, vol. v. p. 613; x. p. 9; and James Simpson's "Necessity of Popular Education" [afterwards known as "The Philosophy of Education"], p. 168.—(G. C.) In the *Phrenological Journal*, vol. v. p. 613, James Simpson, in giving an account of Sheriff Wood's Sessional School in Edinburgh, makes some very good observations on the use and abuse of Emulation in Schools. In the same journal, vol. x. p. 9, Mr Robert Cox, nephew of George Combe, long editor of that journal, and author of well-known valuable works on the Sabbath Question, also treats the subject in two excellent papers on Benevolence and Destructiveness.

Its manifestations when large;

When, on the other hand, the organ is deficient, and the Sentiment, in consequence, is feeble, the individual cares little about the opinion entertained of him by others; and, provided they have not the power to punish his person, or abridge his possessions, he is capable of laughing at their censures, and contemning their applause. Persons of this sort, if endowed with the selfish Propensities in a strong degree, constitute what are termed "impracticable" men; their whole feelings are concentrated in self, and they are dead to the motive which might induce them to abate one iota of their own pretensions to oblige others. If actuated by any strong passion, and endowed with intellect, it is astonishing what they are sometimes able to accomplish in attaining their objects. Strangers to ceremony, and indifferent to censure, they meet with a thousand rebuffs which they never feel, and are loaded with a hundred indignities which never affect them. Free from the restraints which delicacy imposes upon others, they practise upon the benevolence, the disposition to oblige, or the interest of mankind, and succeed in

When deficient.

circumstances in which a sensitive mind could have found only obstacles insurmountable.[1]

The effects of Emulation on study.

It is mentioned by some persons, however, that they are stimulated to excess by Emulation, and that they occasionally ruin their health by their exertions to gain prizes. This error is a serious one, for when knowledge is acquired by laborious efforts, not for its own sake but to gratify the feelings of Self-esteem and Love of Approbation, its *practical* value is not appreciated, and it escapes from the memory when the gratification for which it was acquired has been attained. Information, on the contrary, recommended to the Intellect by its inherent interest, and embraced by the Moral Affections from its practical utility, will become the stock and furniture of the mind through life, and, however limited in amount, it will be all real and permanently available.[2]

Are Prizes good in Education?

The question has been much agitated, whether it be expedient to use prizes as a stimulus to exertion in education. I beg leave to offer a few remarks on the subject, leaving the reader to decide for himself.

The natural rewards of exercising the faculties.

The *natural* rewards for exerting each faculty are—First, the pleasure attending the exercise of the faculty itself; secondly, the value of the objects which it desires, when attained; and thirdly, the consequential advantages which may result from that attainment. Thus, a highly-gifted musician derives intense pleasure directly from exercising his talents; by cultivating them he lays up a store of enjoyment for himself on which he may draw at pleasure; and he may also obtain admiration from the public, and fortune, if he choose to dedicate his abilities to their gratification.

The treatment of bright children;

In some children, certain faculties enjoy high spontaneous activity, and the pleasure and natural advantages attending the exercise of them suffice to render them as active as any sensible teacher or parent would desire. If a child, for example, have a great natural talent for languages, he will learn to read with facility, and experience great pleasure in reading. Books and study will be his delight, and, in many instances, it will be more necessary to offer him a recompense for giving up this pleasure and resorting to play for the benefit of his health, than to stimulate him by honours and to greater mental application. The same remarks apply to n who have great natural talents for drawing, or calculation, hanics, or natural history, or any other pursuit. They will n the direction of these faculties with an ardour and a relish ll render all extrinsic rewards superfluous. For such children, re, prizes, as a stimulus, are altogether unnecessary.

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[1] System of Phrenology, vol. i. pp. 363–4.

[2] America, vol. iii. p. 243.

Of dull children.

e are other children, however, who have very little natural for particular branches of education which their parents wish o learn, such as languages, or arithmetic, or mathematics; they do not experience any direct pleasure in such studies, s have resorted to punishment for deficiency, and prizes for ncy, in the prescribed exercises, as motives to exertion. It be denied that these have a certain effect in promoting the nent of the end in view. A boy with a moderate talent for ges will not study Greek and Latin for his own gratification, s he may be induced to do so by receiving a severe beating if , and a gold medal if he succeed, in learning certain lessons.

The only occasion for prizes.

n the advocates of prizes, therefore, should, in consistency, the application of them to the object of drawing forth exer- om children in studies which are necessary for their destina- i life, but to which they are not naturally inclined. The iminate administration of them is clearly erroneous.

Their nature.

es are of two kinds, either marks of personal distinction, such i places in a class, or medals worn for a day, or property, such ks, sums of money, or medals of gold and silver, bestowed on lividual as gifts. The value of the former, namely places and tions, consists in the gratification which they afford to the re and vanity of the wearer. They mark, not that he is a cholar, but that he is the best compared with his fellows, all om may be only indifferently accomplished.[1]

Objections to prizes:

ious objections present themselves to prizes administered in rm. The gratification consists not in the attainment of an valuable in itself, but in a feeling of personal superiority over hbour. The circumstance which makes a child dux,[2] or brings

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[1] race Mann, the great American educationist, puts this subject very i a letter written in 1852: "We are all anti-emulation men—that is, inst any system of rewards and prizes, designed to withdraw the mind ie comparison of itself with a standard of excellence, and to substitute for that standard." See "Horace Mann's Life" (Horace B. Fuller, , U.S.A.), p. 386. As has also been well said, the aim in education be to generate in the child a desire for *excellence*, not for *excelling*.

[2] x means, in Scotland, the head of a class, and is the Latin word *dux*,

(1.) They foster selfishness and envy.

(2.) They do not cultivate the love of knowledge.

him the decoration of a medal, is not the actual possession of a certain quantity of useful knowledge or of learning, but the accident of the other children in the class with him being more stupid or less diligent than himself. The mind of the child does not always contemplate the medal as the certificate that he has acquired a certain amount of information, but often as the symbol of a personal triumph over all the other children in his class. It, therefore, fosters pride and selfish ambition in the successful competitor, and envy and jealousy in the unsuccessful, feelings which are naturally strong, and need to be repressed; while it does not, in any appreciable degree, cultivate the love of knowledge for its own sake, which is the legitimate object of education. I have known children in whom these passions were strong bribe their more talented schoolfellows, in whom they were less energetic, by giving them money or playthings, to resign high places and medals in their favour. They carried home the trophies thus acquired, and were lauded by their parents for their genius. This was a direct cultivation of falsehood and cunning, in addition to vanity and pride, in the children, and was calculated to exercise a baneful influence over their future lives.

Prizes as rewards for exertion.

Prizes administered in the form of donations of books, money, or other kinds of property, do not necessarily imply the depreciation of other competitors, and in so far are unobjectionable. If they are offered, not as insignia of triumph over them, but as rewards for exertion, they appear much in the same light as fees paid to artists, and to men of talent in the professions of the law and medicine, which assuredly stimulate them to diligent application.

Great evils attend the prevalent system of administering prizes, some of which may be briefly noticed.

8.) They cultivate the lower passions.

In place-takings, the competition is directly personal, and the reward of the successful child is founded on the humiliation of his less successful fellow. In this practice, the attention of the competitors is very little drawn to the value of the lessons themselves; their minds are strongly agitated by the passions of ambition, envy, and hatred. Place-taking, therefore, appears to be calculated to throw into the shade the natural advantages of knowledge, and to cultivate some of the worst passions of our nature.

In place-taking, and in the usual method of awarding prizes, the reward is frequently assigned to those individuals who have least

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a leader, from *duco* to lead; a remnant of old Scotch school Latinity, like *dominie* for the teacher, and *pandie* for a stripe on the hand, another form of the imperative *pande manum*, stretch out your hand.

(4.) They often reward the least meritorious.

merit. If one boy enjoy from nature a great aptitude for learning languages, with a vivacious temperament, and another possess only a moderate endowment of that talent, with a slow temperament; the latter may have sacrificed more hours of play and pleasure in preparing his lessons than the former, yet the clever boy shall reap the prize and the glory of scholarship.

(5.) They often supersede real teaching.

At the time when I was educated, punishment, place-taking, and prizes were, to a great extent, relied on as superseding the duty on the part of the masters of *teaching* the scholars. Our lessons were prescribed, and we were left to *learn* them as we best could, being flogged, confined, and put down places if we failed to say them, and praised, put up, and let out of school early, if we were expert in performing our tasks. This rendered the school literally a place of punishment, a character of it which seemed to be recognised by the teacher himself also, when he rewarded us by abridging the hours of our confinement in it. I do not know whether this practice still lingers in any schools, but I fear that it does.[1]

(6.) They obscure the natural pleasures of knowledge.

The prevalent system of place-taking and prizes obscures the perception, in both teachers and pupils, of the *natural* pleasures and advantages of knowledge. From experience and observation, I am satisfied that, to the great majority of children, a school may be rendered a scene of delightful occupation. A well-conducted Infant school, in which the moral affections are exercised, and the intellectual faculties instructed in objects adapted to their constitution, is resorted to by most children with positive pleasure; and the majority of young men follow courses of instruction in science with a degree of zeal which shows that they regard their studies as a pleasure and not as a burden. If place-taking, medals, and prizes were abolished at ordinary schools, it would soon be discovered that a number of the branches taught, as well as the methods of instruction, are deficient in real interest: it would be found impossible to induce the scholars to make adequate exertions to learn; and the consequence would be, that teachers would be prompted by necessity to select branches of knowledge and methods of instruction calculated to benefit the youthful mind, and thus improvement would be forced upon both teachers and pupils.

(7.) Their non-use has the best results.

A considerable number of excellent and successful schools are now conducted without place-taking, with the best results both on the moral dispositions and the intellectual habits of the children, a fact which shows that the natural advantages of knowledge are sufficient to induce exertion for their attainment when judiciously presented to the youthful mind.[1]

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[1] George Combe gives a most graphic account of the kind of education he received at school, in his "Life," by Charles Gibbon, vol. i. p. 17 *et seq.*

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Works on Emulation and Rewards in Schools.

[On the use of Emulation in Schools and the giving of Rewards, see also the following works:—Edgeworth's "Practical Education," vol. i. chap. 9; Locke on Education, sect. 52; Stow's "Training System," chap. xxii.; Horace Mann on "School Motives," in his Report for 1845, in vol. iii. of his "Life and Works," by Mrs Mann (Boston: Horace B. Fuller), and on Emulation, in his "Educational Tour;" Dr Andrew Bell's "Elements of Tuition," Part Second, Book 2d, Part ii. 9; John L. Parkhurst on "The Means to Stimulate the Student without Emulation," in "The Schoolmaster: Essays on Practical Education," vol. i. (London: Charles Knight); Kiddle & Schem's "Cyclopædia of Education" (New York: E. Steiger; London: Sampson, Low, & Co.) *s. vv.*, "Rewards" and "Emulation;" Currie's "Common School Education," sect. 214 *et seq.*, and his "Early and Infant School Education," sect. 245; Gill's "Systems of Education," see Index (London: Longmans); Dr Wiese's "German Letters on English Education," p. 188; the articles mentioned, p. 386, note 2; and other works on Discipline mentioned at the end of next section, p. 405.—*Edit.*]

4. ON THE PRINCIPLES OF DISCIPLINE IN EDUCATION.

Discipline should remove the causes of evils.

In administering punishment, let the teacher ask himself whether the infliction has a tendency to remove the *cause* of the evil which he desires to remedy. Annihilate the cause, and the effect will, of course, disappear.[2]

In the lower and middle ranks of life, parents often complain of want of respect and obedience on the part of their children; but a common cause of this evil may be found in the deficient knowledge, harsh dispositions, and rude manners of the parents themselves,

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[1] Popular Education, pp. 75–78.

[2] *Phrenological Journal*, vol. xiv. (1841) p. 55; from remarks at meeting of the Phrenological Association, held in Glasgow, in Sept. 1840, of which George Combe was President. "'Education,' says William Ellis, 'deals with *causes*—punishment with *effects*.' What volumes of practical wisdom are embodied in this simple remark!"—George Combe, in *Westminster Review* for July 1852.

True obedience can be based only on respect.

which are not calculated to render them really objects of respect to the higher Sentiments of their children. The mere fact of being father or mother to a child is obviously not sufficient to excite its Moral Affections. The parents must manifest superior wisdom, intelligence, and affection, with a desire to promote its welfare; and then respect and obedience will *naturally* follow. The attempt to render a child respectful and obedient by merely telling it to be so, is as little likely to succeed as the endeavour to make it fond of music by assuring it that filial duty requires that it should love melody. We must excite the faculty of Tune by pleasing strains; and, in like manner, the Moral Sentiments must be addressed by *their* appropriate objects. Harsh conduct tends naturally to rouse the faculties of Combativeness, Destructiveness, and Self-esteem; while the Moral Sentiments can be excited only by rational, kind, and just treatment. As reasonably might a father hope to gather figs from a thorn tree, as to gain the love and respect of his children by maltreating or neglecting them. If a parent desire to have a docile, affectionate, and intelligent family, he must habitually address himself to their Moral and Intellectual Powers; he must make them feel that he is wise and good—exhibit himself as the natural object of attachment and respect; and then, by average children, the reciprocal duties of love and obedience will not be withheld.

The natural and reasonable desires of children should be respected.

If parents knew and paid a just regard to the natural and reasonable desires of the young, they would be far less frequently disobeyed than they actually are. Many of their commands forbid the exercise of faculties which in children pant for gratification, and which nature intended to be gratified; and the misery and disappointment consequent on baulked desire have an effect very different from that of disposing to affection and obedience. The love of muscular motion, for instance, is irrepressible in children, and Physiology proves that the voice of nature ought to be listened to. Yet the young are frequently prohibited from yielding to this instinct, that the family or teacher may not be disturbed by noise; tasks unsuitable to their age and dispositions are imposed; their health and happiness are impaired; and when peevishness, unpalatable to the parents, ensues, the children are blamed for being cross and disobedient!

A friend, who is the father of several intelligent children told me that before he studied Phrenology and the Natural Laws,[1] he

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[1] See the Natural Laws explained and applied to Human Life in George Combe's Constitution of Man; ninth edit., (Edinburgh, Maclachlan & Stewart.)

[illegible] consequence did not f

[illegible] but, finding themselves

[illegible] was not successful, therefo

[illegible]

[illegible] with the Natural Law

[illegible] commandment, but he gave them a d

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[illegible] heart, your stomach, or

[illegible] same time), and cause

[illegible] the children of Mrs

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[illegible] observed a great deal, I

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This is really cultivating the feeling of revenge. It gratifies the child's Self-esteem and Destructiveness, and pacifies it for the moment. The method of proceeding dictated by the Natural Law is widely different. The nurse or parent should take pains to explain the cause of its falling, and present it with motives to take greater care in future. The suffering would thus be turned to good account; it would become, what it was intended by Providence to be, *a lesson* to lead the child to circumspection, patience, and reflection.

Farther illustrations of both.

In exacting obedience from children, it should never be forgotten that their brains are very differently constituted from each other, and that their mental dispositions vary in a corresponding degree. The organ of Veneration, besides, is generally late in being developed; so that a child may be stubborn and unmanageable under one kind of treatment, or at one age, who will prove tractable and obedient under a different discipline, or at a future period. The aid which parents may derive from Phrenology can hardly be overrated. It enables them to appreciate the natural talents and dispositions of each child, to modify their treatment, and to distinguish between positively vicious tendencies (such as deceit, lying, dishonesty) and other manifestations (such as stubbornness and disobedience), which often proceed from *misdirection* of faculties (Self-esteem and Firmness) that will prove extremely useful, under moral guidance, in the maturity of the understanding. The reason for watchfulness and anxiety is much greater in the former than in the latter case; because dishonesty, falsehood, and pilfering betoken not only over-active organs of Secretiveness and Acquisitiveness, but a native deficiency of the controlling Moral organs, which is a more serious evil. When the Moral organs are adequately possessed, the perceptions of children regarding right and wrong are naturally active and acute; and although individuals with a large development of the organs of the higher Sentiments may, under the impulse of the Propensities, commit errors in youth, they will certainly improve as age and experience increase. Where the Moral organs are very defective, the character tends to deteriorate in mature life. After the restraints imposed by parental authority are withdrawn, and respect for the world is blunted, persons deficient in these faculties are prone to become victims to their inferior Feelings, to disgrace themselves, and to bring sorrow on their connections.[1]

Discipline should be regulated according to the natural disposition.

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[1] Moral Philosophy, Lecture vii.

This exemplified in persons with defective faculties;

The larger any organ is, the more it is predisposed to become active; and the smaller, the less so. Hence an individual prone to violence, to excessive pride, vanity, or avarice, is the victim of an unfavourable development of brain, and, in our treatment of him, we should bear this fact constantly in mind. If we had wished, for example, to render Bellingham mild, the proper proceeding would have been, not to punish him for being ill-tempered, for this would have directly excited his Destructiveness, the largeness of which was the cause of his wrath, but to address ourselves to his Benevolence, Veneration, and Intellect, that, by rousing them, we might assuage the vehemence of Destructiveness. In a case like that of David Haggart, in whom Conscientiousness was very deficient, we should always bear in mind that, in regard to feeling the obligation of justice, such an individual is in the same state of unhappy deficiency as Mr Milne is in perceiving colours, and Ann Ormerod in perceiving melody; and our treatment ought to correspond. We would never think of attempting to improve Ann Ormerod's organ of Tune by beating her; and, Haggart's Conscientiousness being naturally as deficient, we could as little have succeeded in enabling him to feel and act justly, by inflicting severe punishment. The reasonable plan in such cases is, first, to avoid placing the individual in circumstances demanding the exercise of the deficient faculty—not to place Ann Ormerod, for instance, in a band of singers, or David Haggart in a confidential situation, where property is entrusted to his care; and, in the next place, to present to all the organs of the higher Sentiments which are largely possessed, motives calculated to excite them and to control the Propensities; so as to supply, as far as possible, by other means, the directing power of the feeble Conscientiousness.

With very defective faculties.

Occasionally, individuals who are very deficient in several of the Moral and Intellectual organs, will not believe in their own deficiencies, and, in opposition to the counsels of their best friends, insist on engaging in enterprises which they are incapable of conducting with success. The proper mode of treating such persons is to restrain them if possible; and, if this cannot be done, to allow them to suffer the disagreeable consequences of their own line of conduct. It is only by undergoing these that their own incapacity becomes practically known to themselves.[1]

In awarding punishments, also, the different functions of the

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[1] System of Phrenology, vol. ii. pp. 189 and 190. See full descriptions of the cases mentioned above, in the same work.

Different discipline required for different persons.

faculties, and the difference of their endowment in different individuals, ought to be kept constantly in view; for what occasions severe suffering to one individual will often excite no uneasiness in another. If the Love of Approbation be powerful in one individual, he will be liable to be deeply affected by disgrace; while, in another in whom that faculty is weak, disgrace will produce a very trifling sensation. In a third individual in whom Acquisitiveness is strong, the loss of property will be dreaded as a serious evil, and he will be more affected by the loss of money than by any other affliction.

Only the lowest require chastisement.

It is only in the very lowest natures that some Feeling may not be found by means of which the conduct may be influenced, and it is only with such individuals that corporal chastisement ought to be resorted to. In such cases, where all our endeavours to elevate the conduct by education prove ineffectual, no duty remains for man to perform but to guard himself against the evils likely to be produced to society by such unfortunate individuals. Such persons ought to be looked upon rather as patients than as objects of wrath. They then become the subjects of criminal legislation.[1]

Real education should exercise all the faculties.

It was lately announced that an attempt made in the new Academy[2] to teach without the infliction of corporal chastisement had failed, and that it had been found necessary to introduce the "tawse," or rod of correction. This result is not surprising; but the legitimate conclusion from it is, not that youth cannot be managed without coercion, but that the system of tuition there pursued is not in accordance with nature. The phrenologist, in surveying the youthful mind, perceives a great variety of Propensities, Sentiments, and Knowing and Reflecting faculties, all endowed with *natural activity*, and soliciting exercise and gratification. Happiness consists in the indulgence of these powers, and suffering or uneasiness is the direct consequence of their permanent suppression. A system of education, therefore, framed in conformity to nature, must afford opportunities for the exercise of *all* the faculties. The Propensities and Sentiments require active life and social intercourse for their expansion; the Knowing or Perceptive powers desire to become acquainted with objects existing in nature and their qualities; and the Reflecting faculties demand a knowledge of relations, to minister to their gratification. The cultivation of the Sentiments and direction of the Propensities belong chiefly to the domestic circle; but, in public schools, proper exercise should be provided for the Intellectual powers. Individuality delights in information concerning objects which exist (history, natural and civil); Locality desires to know places (geography); Order is delighted with arrangement; Colour desires to contemplate the hues and shades of nature, in all their rich variety and profusion; Constructiveness, Size, and Weight delight in the mechanical arts; Form desires to know the figures of objects; Number delights in calculations; Tune and Time, in music and the dance; Language and Ideality, in poetry; while Causality, Comparison, and Wit[1] desire to discover the causes, the analogies and differences of all the other subjects of knowledge.

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[1] Essays on Phrenology (1819) p. 340.

[2] The Edinburgh Academy, founded in 1824. The above was written at the beginning of 1825. See p. 88 regarding the Academy and education at that time.

The neglect of certain faculties a fertile cause of chastisement.

In schools, as at present conducted, the only faculties exercised are Language, Locality, and Number, on which depend reading, geography, and accounts; the other faculties, being left unemployed, produce restlessness and mental wanderings—they stray after objects calculated to excite them, and the lash is then introduced to quell their activity, and to concentrate the whole energies of the pupil on the task prescribed to him. While this fundamental error is persevered in, the "tawse" cannot be dispensed with; but, if the *whole Intellectual powers* were provided with legitimate employment in schools, education would be the most delightful exercise of life,—the deepest attention would reign in the class-rooms, and every countenance would beam with joy; fear and compulsion might then be dispensed with, for the causes which now render them necessary would be removed.[2]

This exemplified in personal experiences at school.

The noise and inattention which provoked Mr Luke Fraser, our teacher in the Edinburgh High School, and led to much of his severity, were the natural consequences of our condition. Fully half of the seats stood apart from the wall and had no backs. In summer, we sat on them from 7 to 9 A.M., from 10 till 12 noon, and from 1 to 3 P.M.; and in winter, from 9 to 11 A.M.; and 12 to 2 P.M.: without any intellectual occupation, except hearing the lessons repeated over and over again, as they descended from the top to the bottom of the class. There was suffering from an uneasy position of the body, and nearly absolute vacuity of mind,—and this at an age when every fibre of the brain and muscles was glowing with nervous activity. If Physiology and the laws of the healthy action of the brain and muscles, and the laws of mental action had been known in those days, everything might have been different. The silence, pleasing excitement, and general good behaviour which reigned when we had an intelligible object presented to us, clearly indicated what was wanted to render us all happy; but the hint was not taken. In point of fact, there was no other rational knowledge adapted to the young mind in the teacher's brain: *ex nihilo nihil fit* was exemplified in his whole teaching. Only on two occasions did he ever, to my recollection, address a word to us beyond translation and grammar of the baldest description. The first of these exceptions took place when we read the description of the bridge erected by Julius Cæsar over the Rhine, given in the "Commentaries."[1] The other instance was due to the occurrence of a thunderstorm, which frightened us by its darkness and proximity. This led him to describe a previous storm of the same kind, which had ended by a thunderbolt striking the front of the Royal Infirmary, quite near to the High School of those days, and breaking the windows on that side. He gave us some account of the nature of a thunderstorm, and how, after a terrible crash, the danger was past; and this sustained our courage till the clouds cleared away. No other items of general information, except these two, dwell on my memory as having been communicated during the four years of my attendance.[2]

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[1] George Combe subsequently changed his views regarding the function of Wit. See his System of Phrenology, vol. i. p. 490.

[2] *Phrenological Journal*, vol. ii. (1824–5) p. 237. The above touches one of the great secrets of discipline, the employment of *all* the faculties *according to the laws of their natural activity*, and one of the best means of its improvement. It was seen by Quintilian, who had a strong aversion to all corporal punishment (Quintilian, i. 3).

The effects of unoccupied faculties on discipline.

The doctrine of Sympathy[3] leads to valuable practical consequences. The Natural Language[4] of any faculty is intelligible to, and excites the same faculty in, another, and this same principle explains why harshness is much less powerful than mildness, in commanding the services of others. Harshness is the Natural Language of active Self-esteem, Combativeness, Destructiveness, and Firmness. In virtue of the above rule, it naturally excites the same faculties in those against whom it is directed, and an instinctive tendency to resistance

The application of the Law of Sympathy to discipline;

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[1] This is described in Part Third, chap. iv. sect. 3.

[2] From Autobiography, prefixed to his "Life," by Charles Gibbon, vol. i. p. 20.

[3] See this doctrine explained, p. 328.

[4] The Natural Language of the faculties is explained, p. 331.

Sympathy applied to discipline;

or disobedience is the result. Among the uneducated classes, this process is exhibited every day. A parent, in a harsh and angry tone, commands a child to do or to abstain from doing something ; the child instinctively resists, and loud threatenings, and at last violence, ensue. These last are *direct* stimulants to Cautiousness ; they overpower the faculties excited only by the indirect stimulus of harshness : and obedience at last takes place. This is the uniform effect of imperious commands : obedience never ensues till consequences alarming to Cautiousness are perceived, and then it is attended with a grudge. Veneration, Conscientiousness, Love of Approbation, and Benevolence, on the other hand, are the faculties which lead to willing submission and obedience, and to which, therefore, we ought to address ourselves. If we stimulate them, compliance will be agreeable to the individual, and doubly beneficial to the person who commands.

And to moral training by Example.

This principle explains, also, the force of Example in training to good conduct, and affords instructive rules for the proper education of the Propensities and Sentiments. Where parents and seniors act habitually under the influence of the higher Sentiments, the same Sentiments in children not only receive a *direct* cultivation, but are sustained in enduring vivacity by the natural expression of their activity thus exhibited. Children, having the organs of the Sentiments early developed, can judge of what is right and wrong long before they can reason ; and hence the importance of always manifesting before them the supremacy of the Moral Feelings. Much of the effect of example upon the future character has been ascribed to Imitation ; but, although this faculty has an influence, I am persuaded that it is small compared with that of Sympathy as now unfolded.[1]

The management of very active children :

Children with well developed brains and a very active temperament are often difficult to manage ; the teacher loses all command of them, and they become petulant, quarrelsome, forward, and unprofitable scholars. Several causes conduce to this. Where the children have the Sanguine-nervous or the Nervous-bilious temperament, and are in high health, they require bodily exercise to a great extent to let off their surplus energies ; and, until this be expended, they are not in a state sufficiently quiescent to rest, and employ their brains in learning. Where the children have active temperaments, and large intellectual organs, they will experience a craving for solid, useful, and precise information, and unless this be supplied, they will be unhappy; their faculties, not being engaged, will wander, and inattention and insubordination will ensue. The organs of Combativeness and Destructiveness, with Self-esteem, are sometimes large, and the temperament being active, these will break out. Some hours hard labour would give vent to their energy. Sometimes the teacher is Lymphatic, or Sanguine-lymphatic, when the children are Nervous, or Nervous-bilious, or Nervous-sanguine; and the former is soft and slow in the *timbre* or tone of his manifestations, while the latter are quick and sharp. The want of harmony between the Temperaments prevents the teacher and scholars from getting into harmony in their minds, and this also causes insubordination. To use force to support authority in this instance is the result of ignorance. It does not remove any of these causes, and either breaks the spirit of the children or renders them hypocritical actors.[1]

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[1] System of Phrenology, vol. ii. pp. 271–2. See the effects of Example explained, pp. 370–1 of the present work.

The employment of their energetic faculties.

You have a child in whom Self-esteem, Destructiveness, and Firmness are predominant, and they, by their spontaneous activity, produce petulance, disobedience, pettishness, and obstinacy. You wish to remove these dispositions and to render the child docile, obedient, respectful, and obliging. Attend to the faculties. You desire Self-esteem, Destructiveness, and Firmness to be quiescent; and Benevolence, Veneration, Conscientiousness, and Love of Approbation to be active.

Of the disobedient and obstinate:

Now, each faculty is roused into activity by the natural objects related to it addressing it from without. Suppose you scold and whip the pettish child, you manifest your own Destructiveness in anger and blows, and your own Self-esteem in authoritative command. As your head is larger and your physical strength greater than the child's, you may certainly overcome it by these means, and terrify it into submission; but look at the means, and mark the result.

The wrong way of its effects;

Your anger and imperiousness tend to excite the *very same feelings* in the child, and, in fact, they actually do so. The child first gathers itself up to set you at defiance. You, therefore, stimulate and give life and energy to the very organs which you wish to subdue; and you do nothing whatever to rouse Benevolence, Veneration, and Conscientiousness, which you desire to excite.

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[1] From MSS. See p. 341, on The Temperaments.

Although, by superior force of your own organs, you overcome the child, he has internally the rancorous feeling of a fallen enemy. He rebels in his soul, after he has yielded in action. Survey his dogged and sulky countenance as he goes to do your bidding, and you will see all the passions now described painted in it, with fear of your superior force added to them.

The right way and its results.

To rouse Benevolence, Conscientiousness, and Veneration, the whole proceedings must be addressed to these faculties. Your voice must be soft, kind, yet firm. You must give indications that cannot be mistaken of a moral purpose, and of an affectionate interest in the child himself. If you must resort to severity, to overcome a resistance that will not yield to mildness and persuasion, you should do so meekly, quietly, and temperately, expressing your mortification at being forced to resort to such unworthy means of overcoming a nervous temper. In ninety-nine cases out of a hundred, you will succeed by the moral method, and the child will have its own offending Propensities allayed in activity, and the higher Feelings cultivated. Every successful repetition of the treatment will be a step towards an ultimate cure; while the other produces an opposite effect.

The treatment of the very deficient.

In the next place, if an organ is not possessed in an efficient degree, the corresponding feeling cannot be experienced. I am not aware of any means of supplying organs *very* deficient, such as Number or Tune. They may be cultivated up to the point to which the organs can admit of cultivation. Do not place the individuals in circumstances which require activity of the power in which they are deficient. If the moral organs are *very* deficient, the child is a moral patient, not reformable by ordinary means.[1]

Personal experiences of defective discipline: (1.) Of mere commands without counsel and reason;

The activity of my Moral and Intellectual faculties, and of my Animal Propensities also, was a source of great unhappiness to me, left, as they all were, to well forth in utter ignorance of their own nature and objects, and undirected by any intelligent and self-consistent discipline. My father and mother never gave us any instruction. They set excellent practical examples before us. They were both highly moral; had an abhorrence of debt; never shrank from their duties; and were kind to the destitute people around them, and to their poor relations. Their industry was unceasing. But they owed all these excellent qualities to nature. Their education wa very defective, and they had never been accustomed to use thei intellects beyond the sphere of practical duties. They appear to me now to have laboured under an extreme diffidence in venturing on counsel or explanation on any moral or religious subject, lest they should err and mislead us; and probably also they were conscious of inability to expound principles and enforce precepts, in consequence of the untrained state of their own Intellectual faculties. Be this, however, as it may, the fact is, that they only ordered us to do or not to do certain things, and scolded us heartily if we failed.

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[1] From MSS.

(2.) Of threats without fulfilment;

My father never beat us, for a reason which he communicated to me before he died. His mother had once beaten him unjustly and severely in a fit of passion, and her conduct had left an indelible and painful impression on his mind through life. "I forgave her," said he, "but I never could *forget* the injury. I mentioned it to her in later life, and she begged of me never to name it to her again. From the moment of the infliction, child as I was, I formed a resolution that no provocation should induce me to leave a similar impression on the mind of any child of mine; and I have kept my word." Dear, good, old father! you did keep your word; but you gave us orders—we were remiss in obedience; you threatened severe consequences—we discovered that you did not execute your threats; we calculated on impunity, and continued our play, when we should have been doing our duty to you. You then threatened louder and louder, until Abram use to whisper to me—"He is getting near the striking pitch; we had better go." And then we went; but I went sullenly, the love of self-indulgence pulling one way, conscience another, and fear only supporting conscience at last.

(3.) Of non-appeal to the higher Feelings;

The conflict between love of self-indulgence and conscience was in me perpetual, and it was a source of great unhappiness. Yet I was not vicious; and my Moral and Intellectual faculties were naturally so strong, and my Love of Approbation and Adhesiveness so vigorous, that one word of moral counsel, accompanied by kindness, approval, or commendation, would have subdued my selfishness and made me as docile as a lamb; but it never came. With a nature highly affectionate, I never received a caress; with an ardent desire to be approved of, and to be distinguished for being good and clever, I never received an encomium, nor knew what it was to be praised for any action, exertion, or sacrifice, however great; and, humble as was the figure I made at school, I did my best, and often dragged my weary bones there, when, with a feebler sense of duty, I should have gone to bed.

(4.) Of neglect of the Reflecting faculties.

Then my Reflecting faculties were active in their own way. I was constantly asking *cui bono?* and got no answer. The education given me in the High School bore no relation that I could discover to the duties of my domestic and social life; and the religion which I learned from the pulpit and Catechism appeared a matter for Sundays only. I never saw or heard it acted on as a practical rule of conduct. On the contrary, I was systematically taught that my religion and the world were at open war; and truly all observed facts and personal experience confirmed the truth of this assurance. But, all the while, my faculties *desired good*, and also consistency between profession and practice, and above all, intelligent views of the objects and aims of my being. It often struck me as unaccountable why so much time and labour should be expended in making me read the histories of the heathen gods and their crimes, while I was informed that they were all false gods; and why Christianity and the heathen mythology should be imparted as branches of instruction of equal importance. In the school, the boys who knew all about the Pagan deities were our heroes, and Christianity was never attended to.[1] In the Church, God, the Prophets, Jesus, and the Apostles, were all in all, and the divinities of the High School were rarely mentioned, and then only as sinful idols. I saw the inconsistencies of this tuition, but was only bewildered by it.

The importance in discipline of a knowledge of self and the aims of life.

I mention these details, childish and serious, to open the way to the remark that no boon would have equalled to me an exposition of my own faculties, of their relations to domestic and social life, and of the line of duty which their constitution and its relations obviously prescribed. And, if I had been trained by intelligence, gentleness, and firmness to walk in that line of duty, I should have been a happy boy and a better man.[2]

Punishments in the schools of Pennsylvania.

According to the Regulations for Common Schools in Pennsylvania, the teacher is required to "pay most especial regard to the morals, habits, and general behaviour, as well as to the mental instruction of his pupils. The punishments to be inflicted by the teacher shall be:—

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[1] In the Middle Class schools of Scotland, Religious Knowledge then, and largely now, formed no part of the instruction given.

[2] From Autobiography prefixed to his "Life," by Charles Gibbon, p. 50. For George Combe's views on the importance of a knowledge of self and of the aims of life, in education, see p. 108 *et seq.*

1st, Reading aloud the rule violated.

2d, Insertion of the offender's name under the head of "bad conduct," in the monitor's book.

3d, Private and public admonition.

4th, Detention after school hours.

5th, Special reports, or complaints to parents or guardians.

6th, *The rod.* The rod shall be applied whenever, in the teacher's judgement, it shall be necessary; when used, it shall be inflicted with certainty and effect, but passion or cruelty in its application shall be avoided.[1]

Works on the principles of Discipline.

[On the important subject of Discipline in schools, especially on its side of Punishment, the following works may be consulted with advantage[2]:—Professor Pillans on "The Causes and Cure of Imperfect Discipline," first published in 1827, and on "The Rationale of Discipline," chap. ii., now included, with Postscript and Appendix, in his "Contributions to the Cause of Education" (London: Longmans); Horace Mann "On School Punishments," a lecture delivered in 1840, and now included in his "Lectures and Annual Reports," being vol. ii. of his "Life and Works," edited by Mrs Mann; Herbert Spencer on "Moral Education," chap. iii. of his work on "Education" (London: Williams and Norgate); Kiddle and Schem's "Cyclopædia of Education," *s.vv.*, "Corporal Punishment," and "Discipline," which are superior articles; the Edgeworths' "Practical Education," vol. i. chap. ix.; Locke on Education, § 43, &c.; Lyman Cobb on "The evil Tendency of Corporal Punishment" (New York); Rosenkranz's "Pedagogics as a System," translated by Anna C. Brackett (St Louis, U.S.); Professor Calderwood "On Teaching: its Ends and Means" (Edinburgh: Edmonston and Douglas), chap. ii.; Jacob Abbott's "The Teacher," chap. iv.;

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[1] America, vol. ii. p. 41.

[2] See additional notes on Discipline by George Combe, throughout the General Principles of Education, beginning p. 263, especially on the Harmonious training of the faculties, p. 312, the use of their Natural Language, p. 331, and the repression of over-active faculties, p. 339; also the practice of the Secular Schools, p. 256, especially of the Williams School, Edinburgh, p. 215, and in the Appendix. For graphic details of the severe discipline to which George Combe was subjected in the Edinburgh High School, and its demoralizing effects on the after-life of the pupils, see his "Life" by Charles Gibbon, vol. i. pp. 18, 31, and 46, *et al.*

[illegible] chap. xv.; Currie's "[illegible] [illegible] chap. ii. and his "Early [illegible] part iii. chap. 5 (Edinburgh: Thomas [illegible] [illegible]" part second, chap. iii., which [illegible] whole subject, and "Systems of [illegible] Longmans); Morrison's "School [illegible] William Hamilton), chap. vii.; Leitch's [illegible] Systems of Teaching," see [illegible] Wiese's "German Letters on [illegible] William Collins & Co.), p. 154; [illegible] chap. iv.; Pestalozzi's "Le[illegible] J. P. Greaves, Letter xxx. [illegible] of Infancy," chaps. xiv [illegible] Stewart); Charles Bray's [illegible] and v. (London: Longmans); [illegible] Andrew Bell's "Elements [illegible]. Simon S. Laurie's Dick [illegible] Edinburgh: Thomas Constable); [illegible] sect. 34; in "The School- [illegible] London: Charles Knight), [illegible] and John L. Parkhurst.

[illegible] school punishments the [illegible]" by the Rev. W. M.

[illegible] AS A PREPARATION FOR [illegible]

[illegible] part of my first course in [illegible] between *instructing* and [illegible] field of Social Life is [illegible] great difference in com- [illegible] and a body of divines [illegible]. In their profession, [illegible] with opposition, without [illegible] with such general deference [illegible] accustomed to contradiction. [illegible] discuss their affairs with- [illegible] making personal allusions;

whereas the clergy, when assembled in their public courts, do not treat each other with that deference which they are accustomed to receive from the world; they meet as equals, espouse opposite opinions, and contradict each other like ordinary men. Their minds, however, being untrained to bear opposition, they lose their equanimity, become heated, fall into personalities, and exhibit extraordinary aberrations from that meekness of spirit which should characterise the Christian, whether clerical or lay. This description was drawn from observations made in my own country, but the latter part of it considerably amused my audience, the precise cause of which I never found out till to-day. I had, altogether unconsciously, described scenes which had recently occurred in the General Assembly of the Presbyterians in Philadelphia, when the ministers quarrelled and split, an event which had attracted great public attention. The utter unconsciousness, on my part, of the blows I was dealing, contrasted with their actual, although accidental, force, excited the risible faculties of not a few of my auditors. The subject was mentioned to me in the course of a conversation about a cause which was then depending in the Supreme Court, between these two sections of the Presbyterian Assembly, and which was exciting great and general interest.[1]

This illustrated by a special case.

One distinct cause of the fear of individuals to oppose public opinion, when wrong, is the want of reliance on the moral tendency of the public mind, and on its influence to correct its own errors, and to do justice to those who have braved its disapprobation in defence of truth. The vivid excitement under which opinion is formed, is one element in producing this terror; but another unquestionably is the uncertainty which is felt regarding both the principles and motives by which, at any moment, it may be swayed. The public intellect is practical and direct, and it neither investigates principles nor embraces distant or comprehensive views; while the public feeling is composed of a confused jumble of selfish and moral impulses, the course of which, on any particular emergency, often defies calculation. Nevertheless the race is ever onward; there is little looking back, little calm reflection, little retracing of steps once taken, unless some unsurmountable obstacle presents itself, which, from its magnitude and immovability, deflects the public mind, or makes it recoil upon itself. It appears to me also that the organs of

Moral training defective in regard to public opinion.

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[1] America, vol. ii. pp. 153–4.

Benevolence and Veneration are larger and more powerful than
of Conscientiousness in the Anglo-Saxon race in general; and
in consequence, both the Americans and British are mor
tinguished for benevolent and religious feelings than for an
sense of justice. This defect renders it more arduous for
viduals, either in Britain or America, to take their stand on
moral principle in opposition to public opinion, because the f
which prompts to the rectification of error, and the redressing
justice, is comparatively feeble in the common mind.

This improved by the better cultivation of Conscientiousness in schools;

But this imperfection may be removed by a more assiduo
tivation of the faculty of Conscientiousness in the young.
common schools embued the youthful mind with a clear know
of its own faculties, of the laws appointed by the Creator fo
guidance, and also of the natural laws which regulate the pr
of society; this information might come in place of monar
and feudal institutions for the guidance of opinion, and might
fixed starting-points, from which the moralist and statesma
divine and the philanthropist, could advance with safety, in
endeavours to check the people when bent on erroneous cou
action.

And Christian and scientific training.

In short, if the gigantic regulating and controlling power of
opinion evolved by the free institutions of America, we
lightened and guided by the principles of Christianity and s
instead of being left to act impulsively and, as it were, blind
would prove itself not a tyrant, but a protector to virtue, law,
and justice, far more efficient than any that has hitherto bee
covered. It would leave thought and action absolutely free,
the legitimate limits of all the faculties (which none of the
of opinion erected by human invention has ever done); wh
would apply an irresistible check at the very point where al
check would be wanted—that which separates the boundar
good and evil.[1]

The pursuit of Wealth:

The Americans are taunted by the British for their exclusi
votion to the pursuit of wealth; but, in this respect, as well
many others, they are the genuine heirs of English dispos
with a better apology for their conduct. One of the earli
junctions of the Creator to man was, "to multiply and repleni
earth." The Americans have a fertile country of vast extent

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[1] America, vol. iii. pp. 299-301.

before them, inviting them to fulfil this commandment; and it would argue mental lethargy or imbecility, were they to disobey the call. But how can a wilderness be peopled and replenished without the creation of wealth? Houses must be built and furnished; clothes and implements of husbandry must be manufactured; animals must be reared: yet these are the constituent elements of wealth. The fertile soil of the West, therefore, invites the active and enterprising spirits of each generation to advance and take possession of it. Within two years after it is cleared, it places in the hands of the occupier a surplus produce, after supplying his own wants. He sends this surplus to the eastern cities to be sold, and receives, in exchange, the various manufactured articles which constitute the conveniences and ornaments of civilised life. The demand of the West on the capital and industry of the East is incessant and increasing. The rich lands of the West, aided by the rapid increase of population, present investments which can scarcely fail, after a few years, to yield an immense profit to the adventurer; and this legitimate drain for capital affects profit and interest and the value of property all over the Union. There are revulsions, no doubt, but the wave never recedes so far as it had advanced, and those who fail are generally men who have engaged in enterprises far beyond the measure of their capital and legitimate credit.

Its real nature;

Were the people of the East, therefore, to despise riches, and to become merely the cultivators of Literature, Philosophy, the Fine Arts, and all the social graces, they would be fit subjects for their own lunatic asylums. The *physique* must precede the *morale* in the order of nature. We must be well lodged, clothed, nourished, and altogether physically comfortable, before we can bend our minds successfully to refinement, Philosophy, and the investigations of Abstract Science. The people of the United States, therefore, are only fulfilling a law of nature. They are peopling and replenishing the desert, and devoting themselves to this duty with a degree of energy, assiduity, and success that is truly astonishing. It is in vain to blame their institutions or their manners for these results. They owe their origin to nature.

Its relation to higher pursuits;

But while I thus hold the Americans as not meriting disapprobation for pursuing wealth as their natural vocation, I regard the impulse which prompts them to do so as one which needs to be watched, and, within certain limits resisted, lest it should swallow up all other virtues. Their real prosperity depends on the co-ordinate activity of their acquisitive with their moral and intellectual

The need of its wise restraint by education.

faculties. If their external circumstances stimulate Acquisitiveness with a power equal to 10, they should put on a power of moral, religious, and intellectual cultivation equal to 15, to guide and restrain it. They are endeavouring to do so by their public schools and, if they succeed, they will, in due season, become a magnificentl great nation,—great equally in the possession of physical and mor civilisation.[1]

Domestic education: Its defects and means of improvement.

The object of education in the family circle is to develop and regulate the Affections, as well as to instruct the Understanding. So far as a stranger can discover by observation, or learn by inquiries, the family education in the United States is exceedingly various, and depends for its character much more on the natural dispositions of the parents than on any system of instruction. In general, the parents are in easy circumstances, are happily matched, are good-natured, active, and frugal; and these qualities insensibly cultivate similar dispositions in the young. But there are, of course, numerous exceptions; and education has not advanced so far among the masses as to render domestic training systematic. Every family has its own manners, maxims, and modes of treatment. Speaking generally, the faculties of the child are allowed free scope in the family circle, without sufficient enforcement of self-denial, or of the subordination of the lower to the higher powers. The first useful lesson to a child is that of self-restraint, or of foregoing a present enjoyment at the call of duty, or for the sake of a higher, although more distant, good. Many American children appear to be indulged in their appetites and desires, and to be too little restrained in the manifestation of their Propensities. Egotism, or the idea that the world is made for them, and that other persons must stand aside to allow them scope, is a feature not uncommonly recognised. The consideration of the manner in which their Sentiments and modes of action will affect other individuals of well regulated and well cultivated minds, is not adequately brought home to them. In short, the active manifestation of the Moral Sentiments in refined habits, in pure and elevated desires, and in disinterested goodness, is not aimed at systematically as an object in domestic training. I speak of the masses composing the nation, and not of the children of well educated and refined individuals.

In intellectual cultivation, domestic education is still more defecre, because in the masses the parents themselves are very imper- ctly instructed.

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[1] America, vol. ii. p. 196.

On the whole, therefore, the domestic training and instruction pear to me to be imperfect, viewed in relation to the objects of larging the mind's sphere of action, of conferring on it the power self-restraint, and also the ability to discover, and successfully to rsue, its own permanent welfare.[1]

Professional education: Its defects and means of improvement.

The great majority of the people of the United States are engaged arts, manufactures, commerce, navigation, agriculture, divinity, w, and medicine; and their pursuits are therefore useful, and pro- ictive of enjoyment. As the paths of industry are rarely obstructed bad laws or artificial obstacles, American civilisation, in this partment, will bear a favourable comparison with that of the most vanced nations. These avocations, however, do not fully develop e highest faculties of the mind. They cultivate Acquisitiveness, lf-love, and the love of distinction, more than Benevolence, eneration, Conscientiousness, and Ideality. They call the Intellect to activity, but many of them do not necessarily direct it to moral jects. They are deserving of all praise as important elements of vilisation, indeed as necessary to the very foundations of it; but order to exhibit the "*internal* nature of man with *lustre* and *andeur*," higher pursuits must be added to and mingled with em. The schools, colleges, and the pulpit must supply the lustre d grandeur in which the avocations of common life are necessarily fective. Great improvements in professional attainments remain be made in the United States. American divines are not, in neral, so learned as those of England, but they appear to be more actical; while the professions of Law and Medicine in the rural stricts, comprising nineteen-twentieths of the whole United States, and in need of large accessions of knowledge, to bring them to a r with the same professions in the enlightened countries of Europe. he improved education which I have suggested would render the ractices of the professions in some degree scientific or philosophical ursuits, in which each individual would endeavour, in his vocation, observe the laws which the Creator has established as essential to ccess, and the calm calculations of reason would, to some extent, gulate the impulsive and empirical movements which have hitherto een fraught with so much suffering to the people.[2]

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[1] America, vol. iii. pp. 258–60.

[2] America, vol. iii. pp. 249–51

6. ON SCIENCE AS A MEANS OF MORAL AND RELIGIOUS TRAINING.[1]

The Moral and Religious faculties should act in Science.

If the qualities of things, and their relations, modes of action, and results, are real, and bear evidence of design in the intelligent and moral Power which instituted and upholds them; and if our Intellect perceives the design, and also forms rules of action from the preception of it; then we need only to train the Sentiments of Veneration and Wonder to hallow these as rules revealed through nature to our Understandings by God, and they will become *religious*—and to train the Sentiments of Benevolence and Conscientiousness to recognise them as embodying duties prescribed by God, and they will become moral; and thus the laws of nature will furnish us with a basis of Religion and Morality. I cannot overstate the importance of our keeping in view, that all existing religions have been formed by associating intellectual ideas about God and His will (in some instances drawn from polluted sources), with the religious emotions;[2] and that there is no natural obstacle to our associating with these emotions, the conceptions of God and His will which we derive from the study of His works, and thus constituting a religion in harmony with our knowledge of existing things and their relations. It is presumable that such a religion would excite, gratify, cherish, and improve all the faculties of our mind. It would necessarily also embrace a code of systematic morality.

The effects of discipline illustrated.

Another advantage which would follow from acknowledging nature to be Sacred, would be the introduction of an efficient religious discipline into life. Discipline consists in prescribing rules of action, and enforcing observance of them by motives that strongly influence the Will. The soldier affords a striking example of its efficacy. I knew a dirty, slovenly, ill-conditioned lad, who used to drive coal-carts, and who, in a fit of drunkenness, enlisted as a soldier. Three months afterwards, I saw him again, and scarcely recognised his identity. He was then clean in person and attire, walked erect, and his manner was decided yet respectful. Discipline—in other words, commands strictly enforced, but accompanied by instruction how to obey them, and the example f obedience in others—had produced the change. In the case of he soldier, discipline accomplishes much more than this. It enders the individual alert, obedient. resolute, and all-enduring, in he discharge of his duties; still the mainspring of its influence is Command strictly enforced.

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[1] For George Combe's views on Moral and Religious training through Science, to which he attached the greatest importance, see the chapter on that subject, p. 121, especially section 2, p. 149.

[2] See this idea worked out by George Combe, in Part Fifth, chap. ii. sec. 1, "On the nature of the Religious Difficulty in education," in which the relation between the emotional and intellectual elements in Religion is aptly compared to warp and woof, and their interaction explained.

This union would introduce religious discipline into life.

Now, we have a discipline of this sort in Nature, if we only pen our minds to understand it. If we know the structure, unctions, and laws of health, of the digestive and respiratory rgans, we shall perceive that temperance, cleanliness, exercise, reathing pure air, and other observances, are prescribed to us y a command that is absolute in authority, that of God Himself, nd enforced by a discipline that is irresistible. On the one hand, ve have health, enjoyment, efficiency, abundance, and length of lays, as the rewards of observance; and, on the other, disease, pain, ncapacity, mental misery, physical destitution, and premature death, s the consequences of disobedience. Every organ and faculty, odily and mental, acts under similar conditions; and a work which hould elucidate each organ, in its structure, functions, and modes f action, and the natural and inevitable consequences of its use and buse, would reveal a system of philosophy, morality, and practical visdom, which might be indissolubly combined with Religion, for it vould proceed from, and be enforced by, a discipline instituted by God.

How this is lost to us.

All these advantages are lost by our obstinate refusal to regard ature as sacred, and by the exclusion of her authority and teaching as practical rules from our literature, our schools, our pulpits, nd our legislative assemblies, either ignorantly, or out of deference o the dogmas of a dark and semi-barbarous age. It is only by egarding Nature as an Institution, and its ruler as God, that Religion can be successfully introduced as a sanctifying influence nd an element of discipline into daily life; and this is not nly possible, but is so obviously practicable, when earnestly and ntelligently attempted, that only the misdirection of our faculties y the dogmas can account for its being so long neglected and resisted.

The same is true of Social and Economic laws.

I have been favoured with the perusal of the manuscript outlines f a series of lessons on Social Economy given privately by my riend Mr William Ellis of Lancaster Terrace, London,[1] to several young pupils, in which he demonstrated that by the order of nature every line of conduct—in the pursuit whether of wealth by farming, manufacturing, navigation, commerce, or by the practice of professions—in order to be successful must be moral: and that success follows skill, industry, and morality, as failure follows ignorance, sloth, and immorality; with the same certainty that a rich crop of corn follows from skilful ploughing, manuring, sowing, tending and reaping.

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[1] This refers, the author informs the editor, to William Ellis's "Religion in Common Life" (Smith, Elder, & Co.), see p. 236, which was published in 858, a few months before George Combe's death, the last work of the latter, 'Science and Religion," from which the above is extracted, appearing in 1857.

These principles applied to the pursuit of Wealth.

The dogmas, on the contrary, represent a state of war as existing between God and Mammon; but Mr Ellis shows that, when this is understood to be a condemnation of the pursuit of wealth, it must be a mistake; because, as the production of wealth is indispensable to human well-being, and also to the practice of morality and religion, there must be modes of pursuing it which are in harmony with morality and religion. Now, surveying in detail all trades and professions, and the pacific acts by means of which their objects—namely, the acquisition of wealth, social distinction, power, influence, and other enjoyments—are most successfully attained, he shows that morality must pervade and form the basis of them all.

This illustrated by a commercial maxim.

For example, the commercial maxim to buy in the cheapest and sell in the dearest market, is generally held to breathe the concentrated spirit of selfishness or Mammonism. But let us try this condemnation by the rules of reason and morality before we acquiesce in its justice. In Odessa, for instance, after a good harvest, there is a superabundance of wheat, more than its inhabitants can consume; in consequence of which its price is very low. In the same city, however, there is a scarcity of cotton and woollen cloths and cutlery; in consequence of which the prices of these necessaries of life are very high. The people of Odessa would feel greatly relieved if some benevolent person would bring them a supply of these articles, and take in return a portion of their superabundant corn. But, in Liverpool, in consequence of a bad harvest, there is a great scarcity of wheat; while, owing to the untiring industry of Manchester, Leeds, and Sheffield, there is a superabundance of woollens, calicos, and broad cloths, which lie unsold, because the people are forced to lay out their money in large amounts in buying the scarce, and therefore high-priced corn. The people of these towns desire, above all things, that some kind friend would bring them wheat and exchange it for these goods that are lumbering their warehouses.

Now, a merchant who owns a ship and has abundance of capital, buys in Liverpool the manufactured articles at the prices at which eir owners are anxious to sell them:—they are cheap, because ey are superabundant. He fills his ship with them, sends it to lessa, sells them there at the price which the inhabitants offer to 'e him for them: and, with that money, he buys the wheat with ich they are encumbered, and pays them the price they ask; it is ow price, because they have more wheat than they can consume. e ship carries this cargo to Liverpool, and there it is eagerly pursed, because it lessens the scarcity of food, one of the greatest ls with which human beings can be afflicted. But, on counting results of these transactions, the merchant finds that he has ned a considerable addition to his capital. This stimulates him l others to repeat the same course of transactions. And what is ultimate effect? The inhabitants of Odessa are at length ieved of much of their superfluous wheat, to their great contentnt; while the supply of the manufactured articles has become mdant, also to their great advantage. Turning to England, in, what has ensued? Wheat has been imported so largely that has fallen in price, and the poor rejoice; while hardware, woollens, l calicos have been purchased, paid for, and exported to so great extent, that the warehouses are empty, prices have risen, and manufacturers are again in full employment at remunerating ces. These results are all the direct consequences of Divine titutions, which give differences of climates and products to ferent parts of the globe; and the gains of the merchant are the rards furnished by Divine wisdom and goodness to those who elligently, honestly, and diligently, apply their knowledge, ll, and capital, in removing the wants and increasing the oyments of their fellow-men. Viewed in this light, as the filment of a Divine appointment, buying in the cheapest and ling in the dearest market passes from the dominion of Mammon o that of God, and becomes not merely a moral but a religious .

Commercial principles are based on Divine laws.

The same holds true of all the duties of life.

Similar observations will be found to hold good in regard to all other necessary acts and duties of life, whenever we shall content to view this world as a Divine Institution, and turn our ole faculties to discover its laws and to act conformably to them. is from the *pursuit of wealth by immoral means*, and the *applican* of it to immoral or useless purposes, that the evils erroneously ribed to it arise. As, by the fiat of nature, wealth is indispensle to human welfare, the sin even of the miser, who makes his perty his god, consists, not in accumulating and investing, but in iences and the Shorter Catechism on the civilisation of Scotland," orge Combe says :—

They are higher than religious dilletanteeism.

You proceed—"I think there are few men of education who ave not felt the calming influence of turning to those works of od in which His laws are never disturbed or broken by a lfish and corrupted will." This is treating Science as a matter of ure dilettanteeism, and indicates an unconsciousness of the mo-entous nature of the question at issue between the "Catechism" nd science. I respectfully ask your Grace whether the fertility of he soil, the health of the body, vigour of mind, the worldly pros-erity of individuals and of nations—in short, the temporal interests f mankind are now governed by means of special acts of super-atural power? This is the form in which the Divine government epresented to us in Scripture was conducted, but it is generally llowed to have ceased with Scripture times. The Scriptures contain no systematic exposition of the government of the world by natural laws. Will your Grace, then, for a moment admit that no Divine government of this lower world exists? or, that if it exists, it is incomprehensible by human reason? Mark the consequence. If the world is not now governed by acts of supernatural power, and if it is not governed on the plan of comprehensible natural laws, then it is virtually a theatre of atheism, a world without the practical manifestation of a God! If, on the other hand, such laws exist, and are given for the direction of human conduct,—if God conducts this government in such a manner that when certain states or conditions of things exist, and then only, certain results always ensue,—I humbly submit that these Divinely-appointed laws are entitled to a higher consideration than you assign to them, when you speak merely of the calming influence which flows from the contemplation of them. They are the finger-posts and trumpet-tongues of Providence making known to intelligent creatures—This way leads to disease, poverty, vice, misery, and death; This other way conducts to health, wealth, virtue, enjoyment, and long life. And are such indications, coming from such a source, to be treated with indifference?

The Natural Laws Divine Commands.

The heart should be reached in Morality and Religion.

Your Grace, speaking of the class of educationists to which I belong, observes—"I take them up on their own ground, and I object to their shallow and false philosophy—a philosophy founded on what they call the Laws of Nature. I object to it and to them, that they are grossly blind to some of the most obvious laws of that human nature of which they pretend to speak. There are especially two laws which they either forget, or of which they are completely

The heart should be reached in Morality and Religion.

ignorant. There is one law, and a most important one, which has come under the observation of all of us thousands of times in our own experience, viz., That one principle which touches the affections of the heart is worth a hundred lectures which affect the understanding only." Why, this is the very doctrine which pervades almost every page of this false philosophy! I shall immediately adduce evidence on the point. Your Grace proceeds—"And there is another law which is equally important, That you cannot possibly get at these affections of the heart, in the broad light and blaze of our Christianity, by attempting to spell out of the Laws of Nature those inferences, correct as they may be, which satisfy the Red Indian of the existence of a Great Spirit from everything he sees around him. You cannot get at the affections of the heart, unless by a distinct and practical teaching of that revelation of the nature and will of God which is given to us in the faith and doctrines of Christianity."

The Natural Laws should reach the heart.

As your Grace, like the Red Indian, sees "the existence of the Great Spirit in everything around you," why should you think so meanly of the operations of this Great Spirit as to speak *only* of their "calming influence?" They produce the same soothing effect on the coloured savage; but has the science in which your Grace "dabbles" and the church in which you worship, taught you no higher use of them than this? Were the affections of your Grace's heart never touched by any of the Great Spirit's manifestations of benevolence and wisdom in the works of nature? You say not, and you ascribe the negation to the "broad light and blaze of our Christianity." This is a striking and painful illustration of the very evil which the Secular Educationists desire to remove. They affirm that God instituted the external world, and impressed regular modes of action on all its parts; that a compliance with the laws of these actions is as indispensable to *temporal well-being*, as a knowledge of Christianity is to spiritual welfare; and that, as *God* has established the connection, *men ought* to *reverence* it. And they complain that the clergy have taught doctrinal faith so extensively, that they have blinded their own understandings, and those of the laity, to the necessity of knowing and reverencing the requirements of nature, which are indispensable to *temporal* prosperity. Your Grace appears not to have a glimpse of this important truth, but calmly propose the removal of "spiritual," as an infallible remedy for "temporal" destitution!

But let us inquire what "the affections of the heart" are to which your Grace alludes. They cannot be parental love, filial piety, the love of the poor, or the love of our friends; because all these

Temporal well-being dependent on the Natural Laws.

virtues existed and were esteemed before Christianity was promulgated, and are to be found in nations among whom it is still unknown. I, therefore, infer that your Grace means specially the love of God, the love of holiness, the disposition to reverence and obey the Divine laws. Now, assuming, in as ample terms as your Grace could desire, the high importance of these affections, and the efficiency of the Christian Religion in awakening and cherishing them in the mind, I affirm that the question under discussion remains wholly unaffected by the assumption. The question is, Are the natural conditions of *temporal* well-being practically embodied in these emotions, as awakened by the peculiar doctrines of the Gospel? It is a certain fact that they are not; for no spectacle is more common, and at the same time more lamentable, than to see undoubtedly religious persons grossly violate the natural laws of health, and bring suffering, and perhaps premature death, on themselves and their offspring; or mistake the laws of social well-being, and advocate the most injurious political institutions. To enable men to act with success in *temporal* affairs, they must learn the Natural Laws by which these affairs are governed, or, in other words, the plan according to which the affairs of the world are administered by the Divine power which we recognise; and my charge against the clerical teachers of the people is that they, with a few honourable exceptions, have grossly neglected this great branch of popular instruction. Your Grace abets them in this neglect, and tells them, that we who wish to remove it are ignorant that "one principle which touches the heart is worth a hundred lectures which affect the understanding only." I have said that this assertion of the importance of "the affections of the heart" is our very doctrine, which we have all along been driving into the public mind, but which they misunderstand, evade, or reject, through mere ignorant prejudice.

The Religious emotions should be associated with these Laws.

The clergy and your Grace treat the agencies of nature, not as Divine Institutions fraught with instruction and command to men, but as mere intellectual conceptions of philosophers. You regard obedience to them as acts of prudence, disregard of them as a matter of small account; and you associate with them no affection of the heart, either high or low, holy or unholy. But this severance of emotion from intellectual conception is *your* doing, and that of the friends whom you patronise. It is no part of the order of nature, such as it emanated from the Divine hand. God endowed man with emotions of awe, admiration, and reverence, and with feelings of

The evil results of this not being done in youth.

love and affection, which may be directed by early training to great variety of objects.[1] Priests know this well. The Roma Catholic clergyman directs these emotions in the young to the Pop the saints, and himself; the Presbyterian clergyman, to the Cate-chism, the Confession of Faith, the Bible, the Church, and himsel And "as the twig is bent, the tree's inclined." But not one of the trains these affections to reverence and obey the rules deducible fro the manner in which God is shown, by Science, to execute his tem-poral Providence, and himself as the Supreme Governor by who that method has been established. This is the cause why teaching the grown-up drunkard the laws of Physiology, the confirmed libertine the pains of dissipation, and the dishonest trader the inevi-table consequences of rash speculation and unjust dealing on his property, is so inefficacious. The sentiments of the heart, reverence to God, and conscience itself, have, by an imperfect and erroneous system of education, been kept disjoined from these laws in youth, and cannot be joined with them in adult life. Nay, your Grace crowns a long list of persons, some of whom consider such a junction as impossible, and others as dangerous; and, in your present state of information, it is probable that you regard such arguments as these as mere balderdash: but they have an intrinsic truth which will commend them to enlightened and unprejudiced understandings.

The manner in which this should be done.

In the very lecture which you are assailing, it is said:—"The grand reform now needed in education is to teach, first, things that exist; secondly, their modes of action; thirdly, the nature of man; fourthly, how the operations of the elements of nature are adapted to the human mind and body, and how they give rise to most of the pleasures and pains of life; and lastly, in every step of this instruction, we should direct the emotional faculties of wonder, reverence, benevolence, conscientiousness, and the love of the beautiful, to God, as the author of all; and train those faculties practically to the faith that, in conforming to His laws, we are paying him the highest homage that can be offered by a rational being to its Creator; and, at the same time, expanding, elevating, and improving our own minds." You attempt to treat these ideas with ridicule. Your Grace means no harm; but I ask you whether this mode of education is practicable? Look at the connection which the priesthood of every country has contrived to establish between these emotions and the objects of its own faith and worship. The adorer of Juggernaut, throwing himself beneath the chariot wheels of his idol; the Hindoo

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[1] See this idea worked out, Part Fifth, chap. ii. sect. 1.

It can easily be done with such themes.

widow ascending the funeral pile of her husband; the weary pilgrimages, and the painful mortifications of Roman Catholic believers, with innumerable other instances—prove that it is possible, by training, to connect those affections even with the most unnatural objects and observances. Why, then, should we doubt that they may be linked with the true revelation of God's power, benevolence, and wisdom, embodied and addressed to the human understanding in the laws of nature?[1]

This kind of teaching exemplified by Physiology.

Suppose we bring before us a group of children from the western shores of Ireland, the Islands of Scotland, and the Tron Church Parish of Glasgow, and begin by asking them, "Who made you?" Most of them would probably answer, God. "How do you know that God made you?" I once put this question to a class of twenty-two boys, from eight to twelve years of age, and, after a long pause, only two of them could find any answer—and these two said, "The Bible tells me." The twenty knew no reason whatever for their belief. "Would you like to know some other reasons for that notion?" "Yes." Here a skeleton was brought in, and their attention was drawn to the ball and socket joint of the shoulder, the hinge joints of the arm and knee, and the bones of the foot and hand; and they were requested to strip off their jackets, and examine whether there was a skeleton in their own bodies. They did so, looked at the skeleton, compared these joints and bones in their own frames with the same parts in it, and declared that they were alike. "Did you make that skeleton in your body?" "No." "Did your father make it?" "No." "Who then made it?" "God." "Do you now know any reasons for believing that God made you?" "Yes." "Then, in all time to come, you must look on your body as the workmanship of God." "Well, did God make that body for your enjoyment? Think before you answer. You are sometimes cold and hungry, sometimes your foot or your arm gives you pain; if you fall on the ice, you are cut and bleed and feel pain; if you fall into the fire or put your hand in too hot water, you are burned. All this comes from the way in which your body is made. Say, then, did God give you a body for pleasure or for pain?" The willing instinct of human nature, even in the most destitute condition in early life, answers, "For pleasure." "Would you like then to know the causes of the pains that you sometimes endure, and to inquire whether it may be avoided?" Every eye and ear is open to receive this information.

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[1] From letter to the *Scotsman*, written January 21, 1852; afterwards published as a pamphlet. See George Combe's "Life," by Charles Gibbon, vol. ii. p. 302.

The manner of treating this subject with this aim.

Suppose that we then explain to our pupils the structure and uses of the bones, the matter of which they are composed, how it is furnished to the body, and the consequences, in reference to health and strength, of its being imperfectly supplied; that we give them the same information concerning the skin, muscles, brain, and nerves; and fully unfold the structure and functions of the heart, blood-vessels, lungs, and digestive organs, and show how the well-being of the whole body depends on their condition; that we next teach the relation of all these organs to mental efficiency and enjoyment; and that, at every step, we refer the structure, functions, relations, pains, and pleasures, all to God, instituted for our welfare, and presented for our study, and to furnish practical rules of conduct in this world's affairs—what would be the probable effects?

How Science becomes Religious by such teaching.

Be it observed that, in the Scottish Islands and west of Ireland, the people have for ages enjoyed clerical instruction. In our islands, the Established and Free Churches and the Roman Catholic Church labour for the edification of the people, and yet the unhappy Highlander, like the Irishman and the Tron Church Parish, Glasgow, sits immersed in dirt. Physiology reveals to us that this is one cause of mental feebleness and moral degradation; because, in such circumstances, the skin cannot deliver the body from its waste matter, and this, circulating in the blood, impairs the action of the brain, and on vigour of brain depends the energy, not only of their bodies, but of their Moral and Intellectual faculties. Suppose, then, that we prove to the young whom we mean to save from degradation, that cleanliness is enjoined by God, and enforce obedience to this law by connecting it with their love of their own well-being, and with their instinctive sentiment of reverence; will this proceeding have any natural relation to the end in view,—inducing them to shun dirt as at once injurious to themselves, and implying disrespect, on their part, to God their benefactor?[1]

Enable children to understand the great fact that, in this world, everything, dead and alive, is an *agent*, producing results appointed

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[1] Lecture "On the Comparative Influence of the Natural Sciences and the Shorter Catechism," delivered in 1851, in which certain criticisms of Dr Buchanan of Glasgow, who referred to the Tron Church Parish there, were replied to.

The only means of infusing this Religious element into instruction.

y God, and therefore not to be evaded by man. It is the clear erception of the *agency* and the *results* being institutions of nature, at is, of God, that fixes attention and commands respect; and no nount of pious exhortation, or mere authoritative precept in words, ill produce an effect on the *Understanding* equal to this: and it is ly when Veneration and Conscientiousness are linked with clear tellectual perceptions and convictions, that the things taught *ay the conduct.* Teachers in general tell me that they are incap- le of infusing this Divine element, naturally and successfully, to their lessons, because they have never been taught, or trained, think and feel in this manner: they have to *pump up* the natural ligious element from memory; and it comes out cold, disjointed, d lame. By bringing it into complete fusion with instruction, you ill do them a real service.[1]

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[1] From letter to Mr Benjamin Templar, of 7th May 1858. See an account of r Templar's labours for education, p. 241.

Examples of the kind of Religious education recommended in this section re given in Part Third, chap. v., and in the Appendix.

See George Combe's ideas on the training of the Moral and Religious facul- ies through Science also explained, chap. v. p. 121.

CHAPTER IV.

INTELLECTUAL EDUCATION.

1. ON THE TRAINING OF THE OBSERVING FACULTIES.

The Intellectual faculties: their classification.

THE Intellectual faculties communicate to men and animals knowledge of their own internal sensations, and also of the external world; their object is to know existence, and to perceive qualities and relations. Dr. Spurzheim's latest division of them is into three genera:—

"I. The External Senses.

"II. The Internal Senses or Perceptive faculties, which procure knowledge of external objects, then physical qualities, and various relations.

"III. The Reflective faculties."[1]

I adopt the same classification, although it is far from being unexceptionable; but, until the analysis of the faculties themselves shall be more complete than at present, an accurate arrangement of them cannot be attained.

The External Senses.

I. By means of the External Senses, men and animals are brought into communication with the External world. The external organs of the senses do not *form ideas.* For example, when an impression is made on the hand, it is not the nerves of touch which form the conception of the object making the impression; they merely receive that impression, and communicate it to the brain, and *an internal faculty of the mind* perceives or forms an idea of the object by which the impression is caused. Without the nerves of feeling, the internal faculty could not experience the perception, because the medium of communication between it and the object would be wanting.

The senses may be exercised, and their powers greatly improved by exercise. The taste of the gourmand is more acute than that of the peasant, and the touch of the artisan than that of the ploughman.[1]

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[1] Spurzheim's "Philosophical Principles of Phrenology." Boston, U.S., 1832, p. 52.

The Perceptive or Knowing faculties:

II. The Perceptive or Knowing faculties take cognizance of the existence and qualities of external objects. They correspond, in some degree, to the Perceptive Powers of the Metaphysicians; and form ideas. The organs of these faculties are small but active. If they had been as large as those of the Propensities, we should have been liable to intellectual passions.[2]

They are early teachable.

The Knowing faculties are susceptible of education at an early period of life. The functions of these faculties are to become acquainted with objects and their qualities, but not to reason. Most of these faculties may be manifested in the first stages of childhood, but the Reflecting faculties, or those which trace abstract relations and consequences, cannot in general be so till a much later period in life.

The proper mode of cultivating the Knowing faculties is by exercising them in active manifestations. If the reader will look over the list of these faculties and their functions, he will

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[1] System of Phrenology, vol. ii. pp. 1, 2, 5 and 27. For his views on the nature and functions of the Senses, see the same work, vol. ii. pp. 1–27. The Education of the Senses is most important, both *for its own sake*, and for its applications in other parts of education, and in life and study; and it should receive greater attention than it does, especially in early years. On this subject, the following works may be consulted: Dr George Wilson's "Five Gateways of Knowledge"; third paper in the First Publication of the Central Society of Education (London: Taylor & Walton, 1837); Currie's "Early and Infant School Education," chap. v., and "Common School Education," part i. chap. vi.; Taine "On Intelligence," book ii. chap. ii. (London: Reeve & Co.); Bernstein's "Five Senses of Man" (New York); Professor Bain's "Senses and Intellect" (Longmans); Dr Andrew Combe's "Management of Infancy," chap. xv. (Edinburgh: Maclachlan & Stewart); Eliza A. Youmans on "The Culture of the Observing Powers of Children," edited by Professor Payne (London: H. S. King & Co.); Dr Hill, of Harvard, "On the Culture of the Senses," in Dr Youmans' "Modern Culture," Appendix (London: Macmillan). An admirable text book for Sense-culture is "Exercises for the Improvement of the Senses, for Young Children" (London: Bell & Daldy). See also Mayos' "Lessons on Objects" (London: Seeleys), and other works for Infant Schools.

Works on the Education of the Senses.

[2] System of Phrenology, vol. ii. pp. 27 and 28. The Knowing faculties, according to George Combe and Phrenologists generally, are Individuality, Form, Size, Weight, Colouring, Locality, Number, Order, Eventuality, Time, Tune and Language. For his views on them, see the same work, vol. ii. pp. 27–150.

They require individual exercise.

have no difficulty in perceiving the class of studies in which children may advantageously engage. According to the present mode of conducting education, the faculty of Language is the only one of all the Knowing faculties cultivated in childhood.[1] Children are made to learn sounds, the meaning of which they are not capable of comprehending; and they are not instructed in regard to the knowledge of many external objects which they are quite capable of understanding, and instruction in which would afford them delight.

The relation between Language and the other Knowing faculties;

However unphilosophical it may appear, yet it is a fact established by every day's experience, that a child may excel greatly in the capacity for learning words, who is not able to manifest Sentiments, or other faculties, in proportion to the faculty of Language. On the other hand, an individual may possess a very limited power of learning words, who may possess great natural genius for other pursuits. If one child, possessed of a powerful faculty of Language, should experience great pleasure, and manifest great power, in learning words; and another child, possessed of powerful faculties of Constructiveness and Form, should experience great pleasure in drawing, cutting figures, and constructing, and manifest these faculties in acts, it is barbarism to punish the latter for manifesting the faculties which nature has made most powerful in his mind, and for not manifesting the faculty of Language as powerfully as the former, which perhaps is bestowed upon him in a very limited degree. It is equally absurd to conceive, that the former individual is endowed by nature, with all the elements of a splendid genius, merely because he manifests one Knowing faculty with superior power.

And between these and the other mental faculties.

In like manner, if a child manifest a great natural talent for calculation or for music, the parent and teacher ought to know the exact sphere of the functions of the faculties on which these acts depend, and either cultivate the faculties of the child, with reference to his future destination, or direct his destination with a regard to the faculties which he possesses. They ought never to conceive for a moment, that a great talent for Language, for Drawing, for Music, for Mechanics, or for Mathematics, implies the possession of Moral Sentiments and Reflecting faculties in equally eminent perfection. While, therefore, they do not despise any talent which nature has bestowed, they ought never to delude themselves into a belief that any particular faculty to which nature has assigned only limited functions, is universal in its scope of activity.[1]

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[1] This was literally true of the education of George Combe's earlier life, as he felt to his sad experience, some details of which are given in this chapter, sect. 3, and, more fully, in his "Life" by Charles Gibbon, in the four first chapters. It is still far too true of the present time.

Individuality: Its functions;

When Individuality is deficient, the individual fails to observe things that exist around him; he may visit a house, and come away without knowing what objects were in the rooms. A person thus deficient walks in the streets, or through the country, and observes nothing. In short, although the external senses are in perfect health,—owing to the feebleness of his observing power, they are not called into activity for the purpose of acquiring knowledge.

Its relation to the Reflective faculties.

This organ, when large, prompts to discovery by observation of things which exist. Persons so constituted do not seek to arrive at new truths by reasoning, but inquire of nature, of men, of books, for information; and hence, many brilliant physical discoveries have been made by persons largely endowed with these and the other Perceptive organs, whose Reflecting faculties have not surpassed mediocrity. Since Bacon's rules of philosophising have been duly appreciated and become fashionable, science has been extensively and successfully cultivated by a class of minds, which, while the method of speculative reasoning prevailed, was excluded from such pursuits. This class is composed of persons in whom the organ under consideration greatly predominates over those of the Reflecting powers. Such individuals are constituted by nature to become observers; and Natural History, particularly Botany,[2] Anatomy, Mineralogy, and even Chemistry, are great departments of knowledge fitted for the exercise of their peculiar talent. The substance of these sciences consists in a knowledge of the existence, appearances, and properties of natural objects, as *facts*; and we need not be surprised to meet with eminent professors of them, in whose heads the Reflecting organs are greatly inferior to the Knowing. When Individuality is small, and the Reflecting organs large, the possessor forms vague conceptions of things that exist, and of facts.[3]

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[1] Essays on Phrenology (1819), p. 325.

[2] See Letter by Mr Hewett Watson, on the heads of botanists, *Phrenological Journal*, vol. viii. p. 101.—(G. C.)

[3] System of Phrenology, vol. ii. p. 32.

Eventuality: Distinguished from Individuality.

The function of Eventuality is to take cognizance of changes, events, or active phenomena, indicated by active verbs. It observes motion; in such expressions as the ROCK *falls*, the HORSE *gallops*, the RIVER *runs*, the substantive springs from Individuality, and the verb from Eventuality. Two gentlemen went to see a review of two or three thousand soldiers. After the review, a friend asked one of them *what regiments* were on the ground. He could not tell. "Did you not observe the numbers on their knapsacks?" "No, I did not." "Did you observe the facings of their coats?" "No." "Then, pray what *did you observe?*" "I observed the *Evolutions*. The men came on the ground in marching columns; they formed line; then column again; then hollow squares;" and he proceeded to describe all their movements. In his head, Eventuality was large, and Individuality deficient. Another gentleman, who heard this discourse, said, "My observations took a different direction. I noticed the numbers painted on the knapsacks of the men, indicating the regiments; the facings, the particular officers who commanded, &c.: but I could not recall the evolutions, as Mr A. has done." In this person, Individuality was large, and Eventuality deficient.[1]

Its exhibition in children and in life.

Eventuality is often largely developed in children, and gives them an appetite for knowledge, in the form of stories and narratives. In practical life, it gives chiefly the talent of observing, recollecting, and describing action; in other words, of observing the occurrences of which history is composed, and of telling the story of what we know. When deficient, great difficulty is experienced in observing, recollecting, and describing active phenomena. Captain Marryat's novels exhibit the faculty strongly, and the organ appears to be large in his portrait. The writings of Godwin show little of it, and, in his mask, the organ is small. Mr Charles Meymott mentions, in the *Phrenological Journal*, vol. xiii. p. 260, that although he remembered the appearance of a certain person whom he had previously known, he could not recollect "when, where, or how often he had seen him, his name, occupation, or indeed any event whatever relating to him. This," says he, "is only one instance out of many of the same kind that are continually occurring to me." He adds, that, in his head, the organ of Eventuality is "relatively much smaller than the surrounding organs."[2]

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[1] System of Phrenology, vol. ii. pp. 93–4.

[2] System of Phrenology, vol. ii. p. 98.

Number: Its functions

The special function of the faculty of Number seems to be calculating in general. Dr Spurzheim limits its functions to Arithmetic, Algebra, and Logarithms; and is of opinion that the other branches of Mathematics, such as Geometry, are not the simple results of this faculty. In this analysis, he appears to me to be correct. This organ probably assists Eventuality and Time in recollecting dates. Form, however, seems also to aid them in this effort, by retaining before the mind the idea of the printed numerals.

When deficient;

I am acquainted with individuals, and include myself among the number, in whom this organ is deficient, and who experience great difficulty in solving the most ordinary arithmetical questions—who, indeed, have never been able to learn the multiplication table, or to perform readily, common addition and substraction, even after persevering efforts to attain expertness.[1]

Examples of its deficiency.

From an early period of my studies in Arithmetic, I despaired of ever being able to learn it. I worked through the rules, and performed the evolutions they described with slow laborious difficulty, and never acquired facility. I remained studying Arithmetic long after my contemporaries had passed forward to higher studies. It was in vain for me to attempt to learn Algebra. It was an incomprehensible mystery.[2]

One young lad in the Asylum for the Blind at New York had a very large organ of Number, and was a great mental calculator. A little girl was extremely deficient in it, and she could never learn Arithmetic. I sympathised with her, as I labour under a similar defect both of the organ and the power. This is a small organ, and from its position, outward from the external angle of the eye, there is difficulty in observing its dimensions accurately, except in extreme cases. In these, however, its local situation and its functions are so clearly discernible, as to leave no room for doubt. I confess myself to be so deficient in the power of calculation, and in the development of the organ, to such an extent as to be incapable of learning the multiplication table;[3] and I continue unable to add, subtract, and divide sums,

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[1] System of Phrenology, vol. ii. pp. 85, 86, 87.

[2] From Autobiography, in his "Life," by Charles Gibbon, vol. i. p. 14.

[3] Caroline Lucretia Herschel, the sister of Sir William Herschel, and his talented assistant, who did so much for Astronomy, "never could remember

Examples of deficient Number.

even of moderate magnitude, correctly, after thirty years of practice.[1]

A gentleman who kindly undertook the management of the tickets for my lectures at Lowell, U.S., wrapped up the sum received from each bookseller in a separate paper, and made the person who paid it, mark on the parcel the amount it contained. When he paid the bills for advertising, &c., he took the money wanted out of one of the parcels, and put the receipts for the payments into it, and brought the whole sums collected to me in this form. Not understanding why he had done this, I placed the contents of the whole parcels together, and asked him how much he had received, and how much he had paid. He could not tell! I then observed that his organ of Number was deficient, and he told me that he had adopted this method, to "avoid confusion." My own organ of Number being equally small, we tried, both by the pen and by counting the money, to discover the amount; but neither of us could succeed! We finally parted, much to our own amusement, without either of us having been able to find out the aggregate sum either received or paid, and certainly it was not the magnitude of the amount that caused our difficulties.

The same principle applied to the Moral faculties.

A deficiency of this kind, when it occurs in the organ of Number, occasions only amusement; but I never experience its effects without sincerely sympathising with those individuals who are as defective in the organs of Conscientiousness or Causality as I am in that of Number. They stand as much in need of external guides to virtue and wisdom, as a man in my condition does of a ready reckoner; and they are equally unfit to fill situations in which active honesty and reflection are necessary to success, as such a man would be to discharge the duties of a teller in a bank.[2]

Colouring: Its deficiency.

I have observed that, in the great majority of individuals who are born and continue blind, the organ of Colouring presents an obvious deficiency in size, while it is developed, to an average extent, in those who have become blind only after the period of full growth; and, in the New York Asylum for the Blind, the same fact was found to

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the multiplication table, but was obliged to carry always a copy of it about her." "Memoirs of Caroline Herschel," p. 316. (London: John Murray, 1876.)

[1] America, vol. i. p. 228.

[2] America, vol. iii. pp. 204–5.

present itself. It shows that an organ habitually deprived of its natural stimulus does not attain its full natural dimensions,—an important point in education.[1]

Form: When large.

The celebrated Cuvier owed much of his success as a comparative anatomist to Form. De Candolle mentions that "Cuvier's memory was particularly remarkable in what related to forms, considered in the widest sense of that word; the figure of an animal, seen in reality or in drawing, never left his mind, and served him as a point of comparison for all similar objects." This organ, and also the organs lying along the superciliary ridge, were largely developed in his head. Mr Audubon says of the late Mr Bewick, the most eminent wood-engraver whom England has produced—"His eyes were placed farther apart than those of any man I have ever seen." Children in whom the organ of Form is very large, learn to read with great facility, even in languages of which they are totally ignorant, and although the book be presented to them upside down.[2]

Locality: Its relations to Mathematics.

Locality appears to be an element in a genius for Geometry. In the heads or busts of six or seven eminent mathematicians which I have carefully examined, this organ, and also those of Size, Individuality, and Comparison, are large. Indeed Pure Geometry treats only of the relations of space, and does not imply agency, or any relation except that of proportion; and hence it might be legitimately inferred to belong to the sphere of the organs now mentioned. Negative cases also coincide with these positive observations. Zerah Colburn,[3] the American youth who was celebrated for his arithmetical powers, turned his attention to Mathematics, but with very little success. He stated to me that he had been taught the first six books of Euclid, and understood the propositions, but felt no interest in the study. He liked Algebra much better; and he had the organ of Number large, but that of Locality deficient. The

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[1] America, vol. i. p. 229.

[2] See two illustrative cases in *The Phrenological Journal*, vol. viii. p. 65, and vol. ix. p. 344; also vol. xi. p. 407.—(G. C.)

[3] Colburn was an "Arithmetical Prodigy," who astonished the world early in this century. He was born of poor parents, at Cabot in Vermont, U.S., in 1804, and died in 1840. George Combe saw him in Edinburgh, and a cast of his skull was taken there. "He was not distinguished," says George Combe, "by high intellectual attainments in other respects. He subsequently became a preacher in New England, and manifested only average abilities."

Locality: Its relations to Mathematics.

gentleman who had taken charge of his education, it is said, at first intended him for a mathematician, but afterwards, finding that his genius did not lie that way, directed his attention to law. Mr George Bidder,[1] when a mere child, displayed such astonishing talent as a mental calculator, that several gentlemen in Edinburgh were induced to take charge of his education; and, on the supposition that his abilities extended to Mathematical Science generally, selected for him the profession of an engineer. Having heard of this intention, and having observed that in his head the organs of geometrical faculties were not developed in any extraordinary degree, I inferred that his eminence as a geometrician would not equal that which he had attained as a calculator, and communicated this conviction, in writing, to Principal Baird, one of his patrons. Mr Bidder subsequently pursued the study of Geometry; but, at the end of two years, both he himself and Professor Wallace informed me, that he was not distinguished for more than common ability in the class.

Mathematics as training the Reasoning faculties.

An opinion prevails, that Mathematics afford exercise to the Reflecting faculties, and that their tendency, as a branch of education, is to cultivate the talent for general reasoning; some persons regard them as the best substitute for the useless Logic of the schools. This idea appears to me to be erroneous. Geometry treats of the proportions of space, and Algebra and Arithmetic of the relations of numbers, and the three constitute the grand elements of the science of Pure Mathematics. For judging of the proportions of space, the faculties of Size, Locality, and Individuality, aided by Comparison, are those essentially required; while the faculties of Number and Order, also aided by Comparison, are the chief powers necessary for dealing with the proportions of numbers. Causation always implies power, force, or agency; and the idea of Causation, or efficiency,[2] does not at all enter into the propositions of Pure Mathematics.

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[1] Bidder was another calculating genius, doing wonderful things when seven years old; able to answer, when eleven, the most complicated questions in Algebra in about a minute, without notation. See George Combe's System of Phrenology, vol. ii. pp. 85 and 275.

[2] George Combe's idea of Causation is this: "In addition to the invariable sequence which Eventuality perceives, a notion of power or efficiency in the antecedent to produce the consequent, appears to me to arise in the mind, when contemplating instances of Causation; and this notion is formed and manifested by means of the organ of Casuality." System of Phrenology, vol. ii. p. 164, in which he controverts Dr Thomas Brown's celebrated idea of mere invariable sequence.

The popular error is not sanctioned by the authority of the masters in Philosophy. Lord Bacon observes, that "the mathematical part in some men's minds is good, and the logical is bad. Some can reason well of numbers and quantities, that cannot reason well in words." Dugald Stewart remarks, that "when it is stated in the form of a self-evident truth, that *magnitudes* which coincide, or which exactly fill the same space, are equal to one another, the beginner readily yields his assent to the proposition; and this assent, without going any farther, is all that is required in any of the demonstrations of the first six books of Euclid."[1] Mr Stewart was a mathematician, and also a metaphysician; and this is a strong testimony to the fact, that the whole of the first six books of Euclid, which constitute a large portion of a common mathematical education, relate exclusively to the proportions of space or magnitude, and do not imply Causation.

Pure Mathematical compared with other reasoning.

Professor Leslie states, that the *whole structure of Geometry is grounded on the simple comparison of triangles;* and Dugald Stewart corrects this remark by observing that "it is expressed in terms too unqualified. D'Alembert has mentioned another principle, as not less fundamental, the measurement of angles by circular arches." It is obvious, that both triangles and circular arches are mere forms of space. "Fluxions," says Professor Playfair, "were, with Newton, nothing else than *measures of the velocities* with which variable or flowing *quantities* were supposed to be generated, and they might be of any magnitude, providing they were in the ratio of those velocities, or, which is the same, in the ratio of the nascent or evanescent increments."[2] Sir John Herschel remarks, that "it must be recollected that there are minds which, though not devoid of reasoning powers, yet manifest a decided inaptitude for mathematical studies,—which are *estimative*—not *calculating*, and which are more impressed by analogies, and by apparent preponderance of general evidence in argument, than by mathematical demonstration, where all the argument is on one side, and no show of reason can be exhibited on the other. The mathematician listens only to one side of a question, for this plain reason, that no strictly mathematical question *has* more than one side capable of being maintained otherwise than by simple assertion; while all the great questions which arise in busy life, and agitate the world, are stoutly disputed, and often with a show of reason on both sides, which leaves the shrewdest at a loss for a decision."[1]

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[1] "Philosophy of the Human Mind," vol. ii. p. 174, edit. 1816.

[2] Dissertation III. "Encyclopædia Britannica."

The limitations of Mathematical reasoning.

In these remarks, I allude merely to Pure Mathematics, or to Geometry and its branches, with Algebra and Arithmetic and their branches. Although these sciences do not treat of Causation, yet they may be applied to measure forces, in instances in which these operate with undeviating regularity. Gravitation is such a force. But wherever agents do not operate in this manner, mathematics are inapplicable. Human actions, for instance, proceed from intellectual perceptions, the impulses of affection, or the force of passion; all of which are causes, but none of them possesses that simplicity of character and uniformity of operation which are indispensable in the application of mathematical measurements. In judging of human conduct, the Understanding must *estimate* by innate sagacity, improved by experience, the influence of motives and of external circumstances; and a high mathematical training, by exercising chiefly the powers conversant with space and quantity, is by no means favourable to the development of this talent, which depends chiefly on Comparison and Causality, operating along with the Affective faculties. Hence an individual may be distinguished for talent as a mathematician, and extremely deficient in this estimative sagacity.[2]

Illative words used in Mathematics.

It is worthy of remark, that the French mathematicians use the word *donc* "then," where the English use "therefore," in their demonstrations. The French *donc* corresponds with the Latin *tunc*, and with the English *then*, or *at that time*, and it is the more correct expression. In a purely mathematical demonstration, the conclusion becomes apparent at a particular point of time, when the proposition and its relations have been unfolded, without the least idea of active efficiency in the premises to produce the conclusion as an effect; whereas the word *therefore* expresses a necessary result of efficiency. In the proposition "The sun shines brilliantly, *therefore* we are hot;" the word *therefore* implies a relation of Causation: whereas in the proposition, "A is equal to B, and C is equal to B, *therefore* A and C are equal to one another;" the relation which it expresses is one of proportion merely, and the French *then* is the more philosophical term.[1]

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[1] "Views on Scientific and General Education, applied to the proposed System of Instruction in the South African College;" reprinted in *The London and Edinburgh Philosophical Magazine and Journal of Science*, vol. viii. p. 432, No. 48, May 1836.

[2] On the educative value of Mathematical studies, a greatly debated question, besides the works mentioned above, see also Sir William Hamilton's "Discussions on Philosophy," p. 257 (Longmans); J. S. Mill's "Examination of Sir W. Hamilton's Philosophy," p. 521 (Longmans); Dr Carpenter's "Mental Physiology," p. 479 (Henry S. King); Todhunter's "Conflict of Studies" (Macmillan); Kiddle & Schem's "Cyclopædia of Education," *s. v.* Mathematics, by Professor Olney, of Michigan, and other works mentioned there.

The faculties that produce Cleverness.

No objection to Phrenology is more frequently repeated, than that such and such persons have retreating foreheads, and yet are very clever. A short explanation will serve to remove this difficulty. In the first place, a forehead may *appear* retreating, not because the Reflecting organs are *greatly* deficient, but because the Knowing organs are very prominently developed, so that if the latter were diminished in size, the former would *appear* relatively larger. But very one must perceive that, the only effect of such a change would be to diminish the Perceptive, without increasing the Reflective powers, although, in such a case, the unskilful observer might magine the development of the forehead to be improved. In the mask of Henri Quatre, the forehead appears to slope; whereas, if he Knowing organs were reduced to the same state of small proection beyond the cheek-bones as in the mask of Voltaire, it would ppear much more perpendicular. But this would clearly detract rom the mental power. It would cause the Reflecting faculties to predominate, only by diminishing talent in the department of obser- ation.

Cleverness distinguished from higher ability.

But, in the next place, let us suppose that a head does retreat onsiderably: still Individuality, and the other knowing organs, may be large; and, if we attend to the *range* of these powers, we shall perceive that the individual may be deficient in Causality and Comparison, and yet be *very clever*, in the popular acceptation of these words. A wide range of sciences, falling under the scope of ndividuality and Eventuality chiefly, has already been pointed out,[2] nd in these a person so endowed may be very learned. Farther, the details of History, Statistics, Geography, and Trade, all belong to he department of simple knowledge; and in them also he may be minently skilled. And, finally, in the daily occurrences of life, cuteness of observation, and the power of treasuring up the lessons of experience, which he may possess, constitute important elements in a practical judgment. If, then, to a large endowment of the Knowing organs, a Nervous temperament be added, the individual may be observing, active, and enterprising; if Cautiousness be large, he may be prudent, and rarely venture beyond the scope of his abilities; if Conscientiousness be large, he may enjoy that delicacy of sentiment which discriminates intuitively where the right lies, and where the path of honour terminates: and, with these endowments, there will be no wonder if he act creditably and cleverly in the ordinary walks of life. These are not imaginary suppositions, but descriptions drawn from observations made on numerous individuals engaged in active business. Such persons, however, are never distinguished for profound and comprehensive views of abstract subjects; which can be reached only by the Reflecting faculties.[1]

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[1] System of Phrenology, vol. ii. p. 77-81.

[2] Page 427.

The relation of Individuality to the other Knowing faculties;

The faculty of Form perceives the forms of objects,—Colouring, their colour,—and Size, their dimensions; Individuality takes cognizance of things existing, and Eventuality of events in general. The question naturally occurs—If the minor Knowing powers apprehend *all* the separate qualities of external objects, what purposes do Individuality and Eventuality serve in the mental economy? One important function of Individuality is to form a single intellectual conception out of the different items of information communicated by the other Knowing faculties, which take cognizance of the properties of external objects. In perceiving a tree, the object apprehended by the mind is not colour, form, and size, as separate qualities; but a *single thing or being*, named a tree. The mind having, by means of Individuality, and these other organs, obtained the idea of a tree, as an existing object, may analyse it, and resolve it into its constituent parts of form, colour, and magnitude; but the contemplation of it in this manner is at once felt to be widely different from the conception attached to the word *tree* as a whole. The function of Individuality, therefore, is to combine the elements furnished by these other Knowing faculties into one, and to produce out of them single conceptions of aggregate objects; which objects are afterwards viewed by the mind as individual existing things, and are remembered and spoken of as such, without thinking of their constituent parts. Although we have no knowledge of the substance of objects apart from their qualities; yet we have a conviction of their substantive existence, and this is given by Individuality. Children early use and understand general terms, such as

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[1] This subject is more fully illustrated in *The Phrenological Journal*, vol. iii. pp. 48, 67.—(G. C.)

tree, *man*, *ship*; and the organ of Individuality is, for the most part, early and prominently developed in them.

Farther, after Form, Colouring, and Size have furnished certain elementary conceptions, and Individuality has united and conceived them as one, such as Man, the faculty of Number may be called into action, to give the idea of plurality; and that of Order, to furnish the idea of gradations of rank and arrangement. Now, Individuality, receiving the intimations of all these separate faculties, *combines* them again, and contemplates the *combination* as an *individual object*, and this is an *army*. After the idea of an army is thus formed, the mind drops the recollection of the constituent parts, and thinks of the *aggregate only*, or of the combined conception formed by Individuality, and regards it as a single object.

And of Eventuality to the same faculties.

The organ of Eventuality is surrounded by Individuality, Locality, Time, Comparison, and Causality, and forms individual conceptions from their combined intimations. A storm is not a specific existing object, nor is it a quality of any thing; yet the mind clearly apprehends it. It is the result of certain physical elements in violent commotion, and all the faculties last enumerated, together with Eventuality itself, which observes motion, combine in furnishing individual conceptions, which Eventuality unites into one idea, designated by the word *storm*. Revolution is another example. A revolution does not exist in nature as a substantive thing, but arises from the combined action of numerous moral and physical causes, the result of which Eventuality conceives as one event.

The cause of the different conceptions of abstract terms.

If these views be correct, the meaning attached by different individuals to abstract terms of these classes will be more or less complete, according to the degrees of development of the several Knowing organs in their heads. If Colouring be defective, and Form be large, the individual will think chiefly of the forms and dimensions of objects; if Form be deficient and Colouring large, he will observe and conceive their colours much more forcibly than their forms; and his abstract terms will embody each object exactly as it is perceived by his own faculties.[1]

2. ON THE TRAINING OF THE REFLECTING FACULTIES.

The Knowing faculties furnish us with knowledge of objects,

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[1] System of Phrenology, vol. ii. p. 147. For a full exposition of George Combe's views on the Perceptive or Knowing faculties, see the same work, vol. ii. pp. 1-150.

The Reflecting faculties: Their functions.

their qualities and relations, and also of events; the Reflecting faculties "act," as Dr Spurzheim expresses it, "on all the other sensations and notions;" in other words, they judge, not of the qualities and relations of external objects, but of the relations of different classes of ideas produced by the Perceptive faculties. They minister to the direction and gratification of all the other powers, and constitute what we call reason or reflection.[1]

Comparison: Its functions;

The faculty of Comparison gives the power of perceiving resemblances and analogies. Tune may compare different notes; Colouring contrast different shades; but Comparison may compare a tint and a note, a form and a colour, which the other faculties by themselves could not accomplish. "The great aim of this faculty," says Dr Spurzheim, "seems to be to form abstract ideas, generalizations, and to establish harmony among the operations of the other faculties. Colouring compares colours with each other, and feels their harmony, but Comparison adapts the colours to the object which is represented; it will reject lively colours to represent a gloomy scene."

Its relation to other faculties;

It attaches us to comparison, without determining its kinds; for every one must choose his analogies according to his knowledge, or from the sphere of activity of his other faculties. He who has Locality in a high degree, derives thence his examples; while another, in whom Form predominates, will illustrate his subject from it. Dr Chalmers drew his illustrations from Mechanics and Astronomy; and the organs which take cognizance of these were large in his head.

And to Reasoning.

This faculty gives a tendency to what is frequently called Reasoning, but which is very different from the correct and severe inductions of a sound logic; namely, it endeavours to prove that one thing is of such and such a nature, because it resembles another which is so and so—in short, it reasons by analogy, and is prone to to convert an illustration into an argument. The published sermons of the late Mr Logan, minister of Leith, afford an example of the productions of this kind of intellect. He is always establishing a proposition, and, to those who do not analyse profoundly, he appears to be an argumentative preacher; but his argument is not induction—it is a mere statement of analogies, closed by an inference that the case in point must be as he views it, otherwise it would be an exception to the ordinary arrangements of nature. Comparison enables the mathematician to perceive the truth of a proposition which is necessarily implied in another, which he knows to be demonstrable.

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[1] System of Phrenology, vol. ii. p. 150. In George Combe's system, in its latest development, the Reflecting faculties are two—Comparison and Causality—as seen in the above work; in his Essays on Phrenology, his first work on the subject, written in 1819, they included Comparison, Causality, Wit, and Imitation.

It is rarely deficient.

This faculty is more rarely deficient than any of the other Intellectual powers, and the Scripture is addressed to it in an eminent degree, being replete with analogies and comparisons. From giving readiness in perceiving analogies and resemblances, it is one element in instantaneous acuteness. The organ is largely developed in a neighbouring nation; and it is correctly observed by an anonymous writer, that "ingenuity in discovering unexpected glimpses and superficial coincidences in the ordinary relations of life, the French possess in an eminent degree."[1]

Its development in children.

In schools, the best scholars generally have much Language and Comparison. In children, the organ of Comparison is usually well developed; and it is remarked by a practical writer, that "children come both to understand and to relish a figurative expression much sooner than we might naturally be led to imagine."[2] "Children," says Miss Edgeworth, "are all more or less pleased with the perception of resemblances and of analogy."[3]

Causality: Its functions.

Individuality and Eventuality take cognizance of things obvious to the senses. Causality looks a little farther than these, perceives the dependencies of phenomena, and furnishes the idea of Causation, as implying efficiency, or something more than mere juxtaposition or sequence. It impresses us with an irresistible conviction, that every phenomenon or change in nature is caused by something, and hence, by successive steps, leads us to the Great Cause of all. In looking at the actions of men, it inclines us to consider the motives, or moving causes, from which they proceed. Individuality and Eventuality apprehend facts and events, or take cognizance of direct evidence; Causality judges of circumstantial evidence, or that by inference. In a trial, a juryman with large Individuality and

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[1] *Edinburgh Review*, Nov. 1820, p. 389.

[2] Wood's "Account of the Edinburgh Sessional School" (1828), p. 179.

[3] "Practical Education," vol. iii. p. 96. System of Phrenology, vol. ii. pp. 151–4.

Eventuality, and small Causality, will have great difficulty in convicting on circumstantial evidence. He in whom Causality is large, will often feel that kind of proof to be irresistible. This faculty induces us on all occasions to ask, Why is this so? It gives deep penetration, and the perception of logical consequence in argument. A great defect of the organ renders the Intellect superficial; and unfits the individual for forming comprehensive and consecutive views, either in abstract science or in business. Coincidence only, and not Causation, in events is then perceived.

What gives the "philosophic understanding."

Dr Spurzheim observes, that "the faculty of Individuality makes us acquainted with objects, that of Eventuality with events; Comparison points out their identity, analogy, or difference, and finds out their harmony; finally, Causality desires to know the causes of all occurrences. Consequently, these faculties together, pointing out general principles and laws, and drawing conclusions, inductions, or corollaries, constitute the truly philosophic understanding."[1]

The Reflecting faculties are trained only by individual exercise.

The Reflecting faculties, like all the others, will be best cultivated by that mode of exercise which makes them produce the most active manifestations. In the Metaphysical systems of Philosophy, ideas have been unfortunately confounded with the mind; and it has been conceived that, if we merely infuse, with sufficient assiduity, a store of moral precepts and philosophical ideas into the memory, we shall produce the highest state of cultivation in the mind. According to Phrenology, however, all beneficial education consists in the cultivation of faculties. Precepts cannot exert an influence on the mind, unless the faculties be previously sufficiently powerful to feel the obligation of them, or to perceive their force. Hence the proper way to make an individual devout, is to cultivate his faculty of Veneration; and this will be better done, by exciting it into a glow of activity by the influence of example, than by merely encumbering his memory with words. Hence, also, the way to render an individual charitable and humane, is to cultivate his faculty of Benevolence; and this will be done more effectually by exciting the faculty to produce active manifestations, than by laying down abstract rules concerning his duty to his neighbour, unattended by active practice of them in life.

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[1] System of Phrenology, vol. ii. p. 166. For a full exposition of George Combe's views on the Reflective faculties, see the same work vol. ii. pp. 150–180.

How to give them energy and activity.

Hence, our great object in cultivating the Reflecting faculties ought to be to give them energy and activity in performing their functions, and to point out the best modes of directing their manifestations. The particular ideas which we furnish are stores or materials for these faculties to work upon; but, if we wish the faculties to produce powerful manifestations themselves, we must excite *them* to act; we must excite them to compare, penetrate, and trace conclusions; we must teach them to use the stores which we furnish: for, till we do so, the latter are of no utility. Hence every mode of instruction in which the *pupil himself* is actively employed is always the best. If prelections alone are read, it will only be minds possessed of great natural internal activity that will derive full benefit from them. Such minds, being naturally energetic, seize on and appropriate thoughts wherever they are to be found; "they gather sweets from every opening flower": but, on minds of inferior capacity, the sentences of the teacher fall like sounds on a deaf ear—they never penetrate; and the sluggish faculties, instead of being excited, are lulled into more hopeless inactivity by dull discourses which they do not comprehend. Where the natural energy of the faculties is weak, or only moderate in degree, it is the more necessary to stimulate them to greater energy by calling them into activity; and hence such a mode of education is undoubtedly the most effectual.[1]

The different training of predominant Reflecting and Observing faculties.

Those individuals in whom the Observing faculties and that of Language predominate, cannot conceive the irksomeness and unprofitableness of an education confined to words and syntax when administered to boys who are deficient in, or only moderately endowed with, these organs, but in whom those of Comparison and Causality and of the Moral Sentiments are large and active. The latter communicate a positive craving to learn the real, the true, and the useful, and to understand the causes of the phenomena which diversify life. To such minds, the ordinary classical academies, as then conducted, were hungry deserts. There is a difference, also, in the modes by which these two classes of minds gain knowledge. Those in whom the Observing organs predominate, acquire their information directly by seeing, hearing, tasting, and touching, which acts are followed by rapid intuitive perceptions of the qualities of the objects and of the character of events. Those in whom these organs are deficient and the Reflective organs predominate, are slow in observing; and even what they do see and hear makes very little impression on them, until it be brought within the range of their Reflective faculties. It becomes necessary, therefore, in teaching them a rule—if in Grammar, to give them a reason for it; if in Arithmetic, to explain on what principle it is founded; if in Morals, not to rest it on mere authority, but to show them *why* the forbidden act is wrong, and that commanded is right; in teaching them History, to explain the *causes* and *consequences* of the events, as well as the moral qualities of the actors.

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[1] Essays on Phrenology (1819), p. 329.

The effects of the non-culture of the Reflecting faculties.

This kind of instruction was too often omitted in the old system of teaching, and hence some boys of profound intellects and fine moral dispositions sat in the benches dreary and desolate, without acquiring ideas or gratification. They were considered as irretrievably dull,[1] and left the school demoralized rather than improved. The correctness of this representation is not contradicted by the fact, that, of the recorded duxes[2] at the High School of Edinburgh, some stand registered in the country's history as men of superior powers; for these will be found to have had an ample development of certain Observing organs which in Andrew were deficient, and also to have enjoyed the aid of private tutors, an advantage which to him was denied.[3] In the High School of Edinburgh, instruction in Science has recently been added to the classical curriculum, and if this arrangement had existed in Andrew's day, it would have exercised a highly beneficial influence on his mental development.[4]

This exemplified by a special case.

When calling lately at the house of a friend, we found one of his sons, a fine boy, with a large development of the Reflecting organs, but deficient in Time and Tune, bathed in tears, and suffering great mental distress, occasioned by his inability to compose a given number of Latin verses, prescribed as a task by his teacher in the

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[1] George and Andrew Combe used to be designated at home by their father as "blockheads!" See "Life of George Combe," by Charles Gibbon, vol. i. p. 91; in which also are given abundant proofs of the evil effects of the education then given in the High School.

[2] See Note 2, p. 389, on the meaning of this term.

[3] See additional remarks on the same subject, in his Autobiography, in "Life," by Charles Gibbon, vol. i. p. 49.

[4] Life of Andrew Combe, p. 29. This book was published in 1850, by which time great improvements had been effected in the curriculum and teaching of the High School, as told, p. 91, in the present work.

The neglect of the Reflecting faculties.

new Academy.[1] The boy excelled in the other exercises of the school, and, having a large Love of Approbation, he felt mortified at his inferiority in this respect. The misery thus caused, recurring day after day, will, we venture to predict, never be effaced from his memory; and, in future life, when he compares the value of the accomplishment with the distress endured in a vain attempt to attain it, he will see slight reason to admire the wisdom which directed his youthful studies. We are no enemies to the highest classical erudition where nature has bestowed, in an adequate degree, the faculties on which a taste for it depends. If an individual possesses a great development of Language, Tune, Time, Individuality, and Ideality, we know of no exercise more fitted to delight his understanding and improve his taste than reading the Greek and Roman classics and attempting to imitate them:[2] but if these organs are deficient, and those of the Reflecting powers, or of the other Knowing faculties, are large; it appears extremely unwise to force a boy to follow a line of study for which he has neither taste nor ability, and to deny him (which is a necessary consequence of his being so occupied) the means of cultivating and gratifying the faculties that he possesses in an eminent degree.[3]

3. ON LANGUAGE, AND THE RELATION BETWEEN WORDS, THINGS, AND IDEAS; AND THEIR PROPER TEACHING.

Communication by Natura Language.

The functions of Language will be understood by a short elucidation. The different faculties, being active, produce desires, emotions, and intellectual conceptions. The mind, wishing to communicate a knowledge of these to other individuals, accomplishes this end by making *signs* expressive of their existence. These signs may consist of the peculiar gestures, looks, and cries, that naturally accompany the actions of the several faculties, and which, being part of our constitution, are universally understood. For example, when the mind is deeply impressed by fear, a certain terror-stricken expression is spread over the countenance, indicative of the emotion. When it is wrapt in pride, the head is carried high, and a cold, repulsive, arrogant aspect is presented to the spectator. These signs constitute the elements of Natural Language,[1] and need only to be presented, to be understood in all countries and by all nations.

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[1] The Edinburgh Academy opened in 1824; see p. 88. The above was written in 1825.

[2] Speaking of his attending Dr. Hill's second class for Latin in Edinburgh University, George Combe says:—"Although I made no progress in acquiring the Latin language, I derived considerable pleasure from hearing the Latin Classics read and explained, and have no doubt that they furnished me with a standard of taste and an interest in literary composition, which developed itself at a later period spontaneously." Autobiography, in his "Life," by Charles Gibbon, p. 59. For a fuller expression of his views on the influence of the Classics in Education, see p. 69 *et seq.* and p. 114 of the present work; and his "Life," vol. ii. p. 199.

[3] *Phrenological Journal*, vol. ii. (1824-5), p. 235.

Communication by means of arbitrary signs through Language.

But mankind possess also the power of inventing and establishing *arbitrary signs* to express their feelings and conceptions. For example, the words, *love*, *compassion*, and *anger*, are mere convenventional signs, by which we in Britain agree to express three internal feelings; and there is no natural connection between the signs and the things signified. The Metaphysicians attribute this talent to Association; but it is a peculiar power of Association given by the faculty of Language only. Persons possessing much of this faculty, have a great natural power of inventing arbitrary signs, and of learning the use of them when invented by others. As this faculty, however, gives the talent merely for *expressing* our feelings and ideas, by means of sounds and forms, it is cognisant of *signs alone*, the *meaning* of which is acquired by other faculties. If a horse, for instance, be presented to the mind, the faculty of Language will give the desire to find a name or sign by which to indicate it, and also the power of associating the appearance of the object with any particular sound or name when invented. But the meaning or signification which the word will embrace will depend on the perfection of other faculties, and the extent to which they have been used. For example, the faculty of Form will judge of the form of a horse; Size, of its dimensions; Colouring, of its colour. A blind man, by the aid of the faculty of Language, may learn to connect his own notions of a horse with the name: but his conceptions will be very different from those attached to it by a person who sees; for the blind man could not judge of its colour at all, and not very correctly of its form and size. In the same way, any individual possessing the organ of Language, may learn the manner in which the word *justice* is generally used; but the meaning attached to it, in the mind of a person who is extremely deficient in the organ of Conscientiousness, will be very imperfect when compared with the notion which would be connected with it by one in whom that organ is extremely large.

Their signification dependent on other faculties.

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[1] See Natural Language explained, p. 331.

The reason of the different meanings attached to words.

Every Metaphysical author complains of the ambiguity of words, and shows how the vagueness of their signification retards the progress of Moral and Intellectual Science; the exposition now given shows whence this vagueness arises. Before individuals can attach precisely the same conceptions to words expressive of feelings, and judgments of the Understanding, they must possess a similar combination of faculties; and, as no two individuals do possess an exactly similar combination of faculties, so as to be capable of feeling and judging alike, there will be shades of difference in the meaning attached by different persons to such terms, in spite of every effort to define them. In consequence of this difference in the faculties, the very definition itself is differently apprehended. In Mathematics and Algebra, the things indicated by the signs are not feelings, which vary in every individual, but relations and proportions of space and numbers, which have a definite and fixed existence, and which, if apprehended at all, can be conceived only in one way. Hence arises the precision of the language of these sciences, compared with that of Metaphysics and Moral Philosophy.

The limits of Association by means of Language.

The power of Associating, by means of the faculty of Language, conceptions with signs, is limited in one respect. Any *indifferent* object may be selected and used as the arbitrary sign of a Propensity, Sentiment, or Conception; but, if the object already stands in a *natural* relation to any faculty, it cannot, except with great difficulty, be made the arbitrary sign of an opposite emotion. For example, we might, by a mutual understanding, constitute a square figure the artificial sign of the emotion termed *rage*. After the agreement was understood, that figure would suggest the notion of rage, just as well as the letters now composing that word, which are mere forms placed in a certain order. But, if we were whimsical enough to use the outline of a sweet and smiling countenance, which, likewise, is merely a species of form, as the sign of this emotion; we could not, without great difficulty, learn to associate the idea of rage with this figure, for it is already the natural sign of emotions entirely opposite: it would excite Benevolence *directly*, more forcibly than Destructiveness indirectly, through the medium of Language; it would call up ideas of joyfulness and innocence, rather than of anger and cruelty. In the same way, we might associate feelings of veneration, pity, affection, or grief, with soft and *slow* notes of music, because these notes themselves stand in a natural relation to such emotions; while it would be difficult to form associations, by which they should become the artificial signs of violent rage, jealousy, and fury.

The relation of feelings and conceptions to words.

Philosophers have written voluminous disquisitions on the influence of words on thought; but, if the view now presented be correct, feelings and conceptions must, in every instance, *precede* the intelligent use of words; and the invention of a term for which no idea exists, instead of being a step towards the advancement of knowledge, would be a simple absurdity. It is true that the language of any nation is a correct index of its mental attainments; but this happens, because, in proportion as a people acquire notions, they invent words to express them, and not because they first invent words and then use them as a means of acquiring ideas.

The relation of writing to Language.

The art of *writing* greatly facilitates the progress of knowledge; but it does so only by giving precision to words and permanence to thought. Written words are to emotions and intellectual conceptions, what figures are to numerical quantities, and their relations; they serve to express, and enable us to record, our past attainments, and thereby to advance, unincumbered, in the path of discovery; in no instance, however, can they profitably precede the acquisition of ideas. The new nomenclature of Chemistry smoothes the study of that science; but the nomenclature itself was the *result* of correct and enlarged ideas of the nature and relations of chemical substances, and could not possibly have been formed before these were obtained.

In education, things should precede words.

If these principles be sound, it is a grievous error in education to devote the years of youth chiefly to the study of languages. In all cases, knowledge of objects and their qualities and relations should precede the study of words; for it is only in consequence of that previous knowledge that words become significant and useful. A good education should embrace the culture of *all* the faculties; which can be attained only by exercising each on its own objects, and regulating its action.

The effects of large Language;

Persons who have a great endowment of the organ of Language, abound in words. In ordinary conversation, their expressions flow like a copious stream—in making a speech they pour out torrents. When this organ is extremely large, and those of Reflection small, the individual is prone to repeat, to the inconceivable annoyance of the hearer, the plainest sentences again and again, as if the matter were of such difficult apprehension that one enunciation is not sufficient to convey the meaning. This practice appears to originate in an immoderate power and activity of the organ of Language—so great that delight is felt in mere articulation, independently of reflection.

Of small Language.

When the organ is very small, there is a want of command of expression, a painful repetition of the same words, and a consequent poverty of style, both in writing and in speaking. The style of that author is generally most agreeable, in whom the organs of Language and of Reflection bear a just proportion to each other. If the Intellectual powers are very acute and rapid, and Language not in equal proportion, a stammer in speech is frequently the consequence.

The power of learning foreign languages.

Individuality, Eventuality, Time, Comparison, and Imitation, greatly assist this faculty, when applied to the acquisition of foreign languages and Grammar. I have observed that boys who are *duces*[1] in classes for languages, generally possess such a combination; and that this endowment, with moderate Language, accomplishes more in the way of scholarship, than a large development of the latter organ, with a small endowment of the others. Such individuals have a great facility in recollecting rules, as matters of fact and detail, in tracing etymologies, and in discriminating tenses and shades of meaning. The combination alluded to gives them great readiness also in using their knowledge, whatever the extent of it may be.

The power of learning to repeat.

The doctrine before laid down, that the signification of words is learned by means of other faculties, removes an apparent difficulty in regard to learning to repeat, which occasionally presents itself. A person with a moderate organ of Language, will sometimes learn songs, poetry, or particular speeches by heart, with considerable facility and pleasure: but, in such cases, the passages committed to memory will be found highly interesting to his other powers, such as Ideality, Causality, Tune, Veneration, Combativeness, or Adhesiveness; and the study and recollection of vocables only, will be difficult and disagreeable to him. To a person, on the other hand, in whom the organ is decidedly large, mere words are interesting, and he can learn them without caring much about their meaning. Hence, also, a person with a moderate organ of Language and good Reflecting organs, may, by perseverance, learn languages, and attain proficiency as a scholar; but he will not display copiousness, fluency, and richness of expression in his style, either in his own or in a foreign tongue.

Language, then, expresses merely the feelings and conceptions produced by the various primitive faculties acting separately or in combination. Now, let us imagine the cerebral development of a

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[1] See Note 2, p. 389, on the meaning of this term.

The relation of Language to the other faculties.

The relation of a learner to a foreign language.

nation to be distinguished by large organs of the Propensities, Sentiments, and Knowing faculties, small Reflecting organs, and little Secretiveness. Their language, being the spontaneous growth of such a combination, would naturally abound in words expressive of simple feelings, and of conceptions of individual objects and their qualities; while it would be poor in terms of abstract relation, conceived by the faculties of Reflection. For the same reason, the transitions in such a language would be rapid, like those in Mrs Quickly's speech, and they would follow the order of the occurrences which excited the ideas; Secretiveness being small, there would naturally be little involution in the arrangement of the words. Suppose, on the other hand, that, in another nation, Secretiveness and the Reflecting organs predominated; the genius of their language would differ widely from that of the people first described. Their expressions for discriminating individual conceptions would be fewer, while their stock of words and phrases designative of abstract relations would be more extensive, and the general structure of their sentences would be more involved. Suppose, again, two individuals, with equal organs of Language, and consequently equal power of learning words, as mere signs, to possess, the one a head like the former, and the other a head like the latter people, and that they attempted to learn these different languages. It appears probable that the one with the first mentioned development would find the genius of the first language the more easy and natural to him; he would acquire its forms of collocation and its niceties of designation with facility and delight, because they would coincide with the modes of feeling and thinking of his own mind. If, on the other hand, his attention were directed to the language of the second people, he would meet with greater difficulties. Although he might master the words, he would not find the idioms natural to him; the forms of expression depending on the Reflecting powers, and likewise the involutions introduced by Secretiveness would, through defect of tact to apprehend them, appear to him extremely intricate and unintelligible: he would be obliged to learn them by *rule*, and rules alone never produce a really excellent linguist. The second language, on the other hand, would appear natural and easy to the other individual possessing a head like that of the people who invented it.

If these views be correct, the talent for learning the genius or spirit of different languages will depend upon the development of the organ of words, in conjunction with the power of the individual to enter into the feelings, and form the precise kinds of intellectual

On learning the "spirit" of a language.

ombinations, of different nations; or, upon his capacity to enter nto the mental state of others—a power conferred chiefly by Secretiveness, Imitation, Individuality, and Eventuality, aided of course by the other primitive faculties. Although this is merely a theory thrown out for the consideration of the reader, yet it has been suggested by facts. I know an individual who has an excellent development of many of the organs, but is a very decided character, and possesses little of the talent of entering into or accommodating himself to the feelings of others; and he experienced an inconceivable difficulty in acquiring the simplest French idioms. I know another young gentleman who was in the same situation in regard to Latin, and who has little versatility. In them, the organ of Language is rather deficient. On the other hand, I have met with several persons in whom the organ was equally deficient, and who possessed the power of learning foreign idioms; in their case, however, the power of amalgamation with the mental states of others was decidedly greater, and their organs of Secretiveness, Imitation, Individuality, and Eventuality were larger.[1]

How Instruction is best gained.

The Intellect, which consists of the Observing and the Reflecting faculties, is the medium by which instruction is gained.

(1) The best *means of acquiring* instruction, is to bring the faculties *into direct communication* with their natural objects—as Form with forms, Colouring with colours, Individuality with objects that exist, the Reflecting faculties with the relations of objects.

(2) In *prosecuting* instruction, we should avail ourselves of the plurality of the organs, and *relieve the faculties by alternating the studies.*

(3) We should avail ourselves of the plurality of the organs, *by employing as many organs as possible.* If I wish to lift a weight and employ one finger, my power is limited to its strength. If I employ one organ only, as Language, the power is less than by employing more. Therefore call in the aid of Form, Colour, &c.; in Mathematics, use diagrams; in Geography, maps. Natural History addresses all the organs in the Observing ridge.[2]

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[1] System of Phrenology, vol. ii. pp. 124–135. See additional observations on the relation between words and ideas, and between Language and the other faculties, in the chapter on Linguistic Education, p. 69. The prominence George Combe placed on things as compared with words is appropriately shown in his motto, adopted from the first,—"RES NON VERBA QUÆSO."

[2] From MSS.

The right procedure in teaching things and names.

There are two modes of obtaining knowledge. The one is to present the object directly to the faculties, and then add the name; the second is to give the name, and add a description. Now a word is nothing of itself; before it is of the slightest importance, it must be joined to an idea. The difference between the two modes of instruction may be thus illustrated. I have a bust behind me. Suppose I describe it to you and give you the name, how faint would be your conception of its size, form and colour! I now present it to you, and give you the name. The object being directly presented to the faculties, you will obtain a better idea of it in three minutes than from a description of three hours' length. When you send your children to school and set them to learn by rote, you give them words merely, not ideas; you increase their knowledge of signs, not of things.

The importance of the actual presentation of things.

The true plan is to present the object to the children. Let them examine its form, size, colour and other particulars; and afterwards tell the name, and spell it. All nature is adapted, in the most beautiful manner, to the faculties, and the study of nature imparts great pleasure. Thus the curiosity of children to know things is insatiable. You are aware that they will break their playthings to see what is within. When properly taught, the elements of all the sciences are simple. Talk to a child of Geometry, triangles, and hexagons, and you will puzzle it completely. But present a figure, let it notice that it has three sides and three corners, then tell it that all such figures are triangles; and it readily understands the matter. So of the other geometrical figures. Children always take pleasure in learning by actual presentation. They can be instructed in almost anything which can be presented to them directly, and subjected to their senses.

Education in things illustrated:
(1.) By dissection;

To prove this, I dissected, before two girls and a boy, the heart and lungs of a sheep. Their delight was great, the impression made on their minds vivid and lasting.

The teacher under whom I suffered—for that is the term commonly used in Scotland[1]—was fond of Mechanics, and he constructed a bridge after the plan laid down by Cæsar in his "Commentaries," which was always brought out when a class came to that part. I recollect with what anxiety we looked forward to the time when we should be allowed to study Cæsar's bridge. At length it came; and then, instead of the disinclination to go to school, the tardiness, the truant-playing, and listlessness of other times, all was eagerness and attention. There was no occasion for scolding or flogging. We went on reading and examining with the greatest assiduity; and thus the most difficult part of the "Commentaries" became to us the most easy. When the description was over, with what regret did we see the bridge deposited in the closet whence it had been taken! Monotony recommenced, and the arm and "the tawse" were again employed to do the work of the teacher's brains.[1]

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[1] This phrase is not in general use in Scotland, and never was. It would seem to have been used by the High School boys, in George Combe's time. He says, "The torture and screams and reckless injustice of this rule made us High School boys, when we met many years later in society, ask each other 'Under whom did you suffer?'"—Autobiography, prefixed to his "Life," by Charles Gibbon, vol. i. pp. 18 and 46.

(2.) By Cæsar's bridge;

(3.) By Wilderspin's Infant Education;

The above observations are well illustrated and confirmed by the results of Mr Wilderspin's system of Infant Education. In the first place, the schoolrooms are large and well ventilated, so that the children constantly breathe pure air. Then, surrounding the school, is a dry, airy playground, and the play and lessons are so judiciously alternated that neither lose their attractions by over-duration. And, in the school, the truth that the organs of the brain, like the muscles of the body, will become wearied by long exertion is practically attended to. One object of study is never dwelt upon so long as to cause fatigue. In their intellectual exercises, the presentation of visible and tangible objects holds the most conspicuous place. By degrees, they are familiarised with a great variety of substances, with their qualities and relations, their natural and artificial combinations. All the faculties which take cognisance of external things are thus directly stimulated and pleasurably excited. They obtain, by this means, a vast amount of useful knowledge, as it were in play. The teacher will take a mathematical figure—a triangle, for instance—and ask them if they would like to talk about it. Yes, they are all anxious. He gets them to describe it. They see that it has three sides and three corners, and tell him so. After they have examined it for a certain time, he asks if they would like to know the name. He then tells them the name, and they repeat it. Would you like to tell mother how to spell the word? he will next inquire, perhaps. Yes, they would like that very much. He then sets up the word with wooden letters, and they spell it over. In this way, they learn to read, as it were incidentally. Instruction is never prolonged more than a quarter of an hour.[1]

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[1] See this same story very well told, in his "Life," by Charles Gibbon, vol. i. p. 20. The only other intellectual incident that occurred, during his four years' attendance at this class, is told at the same place, and at p. 399 of the present work.

(4.) By teaching Geography;

In visiting a friend this evening, an influential man, we found that he entertains very enlightened views regarding what constitutes education, and what is necessary to be done in improving it, for the true interests of the United States. He advances the instruction of his sons in a way at once simple, agreeable, and efficacious. In the evening after tea, when the family are enjoying the quiet comfort of the winter fireside, he desires one of his sons to read from the daily newspaper the list of ships which have arrived in the port of Boston; it specifies the places from which they have come, and the nature of the cargo. He then asks one to point out the place in the map, and to tell the latitude and longitude; another is requested to assign a reason why it brings that particular cargo from that port. This leads to an explanation of the climate, soil, and natural productions of that part of the globe; this is often followed up by details concerning the religion, government, manners, and customs of the people. They learn a great deal of useful and interesting information in these conversations, which also give them a perception of the real value of their geographical and historical studies at school.[2]

(5.) By the teaching in a German school:

The following letter, written by a young gentleman who is personally known to me, and who, after studying at the High School of Edinburgh, went to Cassel and Göttingen, is lively and instructive:—[3]

Practical knowledge is given.

"In Germany, as in England, boarding-schools are the principal seminaries of education, day-schools like those which we have in Edinburgh being seldom if ever met with. These boarding-schools are attended, not only by the boys who reside with the teacher, but also by what are called day-boarders; and masters for drawing, dancing, music, and other ornamental and useful accomplishments, teach at stated hours, as in similar establishments in this country. There are in Germany no such institutions as our High School, where almost nothing but Latin is taught; and indeed no one thinks of learning Latin, except those who are intended for the learned professions, and who absolutely require a knowledge of it. Thus, boys in general, instead of spending five or six years in a state of misery, are enabled to acquire an extensive stock of useful and practical information.

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[1] American Lectures, edited by Boardman, p. 343.

See note on Wilderspin's System, and George Combe's appreciation of it, p. 322.

[2] America, vol. i. p. 168-9.

[3] The writer was the late Sir James Coxe, his nephew, Commissioner in Lunacy, author of several works on that subject, editor of the last edition of George Combe's works, and chairman of the Combe Trustees. An account of his intimate connection with George Combe will be found in the "Life," by Charles Gibbon (see Index).

Science is practically taught.

"In German boarding-schools, Natural History is a prominent object of pursuit, and the boys are instructed in the outlines of Zoology, Ornithology, Entomology, and Mineralogy. This branch of education is devoured by the learners on the Continent with the utmost avidity. There the teacher is not an object of fear, but the friend of his pupils. He takes them, about once a fortnight, to visit some manufactory in the neighbourhood, where they are generally received with kindness, and are conveyed through the whole building by the owners, who seem to have pleasure in pointing out the uses of the various parts of the machinery, and in explaining to their juvenile visitors the different operations which are carried on. Suppose, for example, that an expedition is undertaken to a paper-mill: the boys begin their scrutiny by inspecting the rags in the condition in which they are first brought in; then they are made to remark the processes of cutting them, of forming the paste, of sizing the paper, &c., with the machinery by which all this is executed. On their return, they are required to write out an account of the manufactory, of the operations performed in it, and of the manufactured article.

Field excursions give a knowledge of natural objects;

"During the summer months, pedestrian excursions are undertaken, extending to a period of perhaps two, three, or four weeks. Everything worthy of attention is pointed out to the boys as they go along; and deviations are made on all sides, for the purpose of inspecting every manufactory, old castle, and other remarkable object in the neighbourhood. Minerals, plants, and insects are collected as they proceed, and thus they early begin to appreciate and enjoy the beauties of external nature. If they happen to be travelling in the mountainous districts of the Hartz, they descend into the mines, and see the methods of excavating the ore, working the shafts, and ventilating and draining the mines. Ascending again to the surface, they become acquainted with the machinery by which the minerals are brought up, the processes of separating the ore from the sulphur and the silver from the lead, and the mode in which the former metal is coined into money.

Manufactories are visited and explained;

"Having become familiar with these operations, the boys next, perhaps, visit the iron-works; and here a new scene of gratification is opened up to their faculties. The furnaces, the principles of the different kinds of bellows, the method of casting the iron and forming the moulds,—everything, in short, is presented to their senses, and fully expounded to them. In like manner, they are taken to the salt-works, and manufactories of porcelain, glass, acids, alkalies, and other chemical bodies, with which that part of Germany abounds. If any mineral springs be in the neighbourhood, these are visited, and the nature and properties of the water explained. In short, no opportunity is neglected by which additions to their knowledge may be made.

The amount and value of this knowledge;

"In this way, I may say without exaggeration, they acquire, in the course of a single forenoon, a greater amount of useful, practical, and entertaining knowledge than they could obtain in six months at a grammar-school. For my own part, at least, I learned more in one year at Cassel than during the five preceding which were spent in Edinburgh. This knowledge, too, is of a kind that remains indelibly written on the memory, and that is often recalled in after life, with pleasure and satisfaction. How different were my feelings, when thus employed, from those which tormented me in that place of misery, the High School of Edinburgh![1] These journeys not only have a beneficial effect on the mind, but also conduce, in no small degree, to the growth and consolidation of the body. They are performed by short and easy stages, so as not to occasion fatigue.

How it is tested;

"On their return home, the boys write an account of their travels, in which they describe the nature of the country through which they have passed, and its various productions, minerals, and manufactures. This is corrected and improved by the teacher. The minerals and plants which have been collected serve at school to illustrate the lessons.

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[1] This letter was inserted in No. XXX. of the *Phrenological Journal*, vol. vii. (1831–2), and the Editor (not myself) here subjoins the following note:—"Our correspondent's language is strong; but as we know it to be nothing more than the expression of honest and heartfelt indignation, we have allowed it to remain unmodified. We ourselves can never forget the *tædium vitæ* which attended us during the lingering years in which we made a strenuous but unsuccessful attempt to overcome the difficulties of Latin Syntax, at the High School of Edinburgh. Often did we envy the condition of boys who laboured in the field for a scanty subsistence, but whose minds were free from the intolerable and spirit-breaking *incubus* of Latin grammar." It is proper to add that, in another seminary and at college, the writer of this note subsequently attained considerable proficiency in classical literature, and is an admirer of it; circumstances, however, which do not prevent him from concurring in the views expressed in these lectures regarding Classical education. (G. C.)

The formal studies engaged in;

"The boys likewise go through a regular course of study, and receive lessons on Religion, Geography, French, and the elements of Geometry. They are taught also the elements of Astronomy; not merely the abstract particulars generally given in courses of Geography in this country, relative to the moon's distance, the diameter and period of revolution of the earth, and the like, but also the relative positions of the principal constellations. The figures of cubes, cones, octagons, pyramids, and other geometrical figures, are impressed upon the minds of the junior boys by pieces of wood cut into the proper shapes. Latin is taught to those who particularly desire it. Poles are erected in the garden for gymnastics, and the boys receive every encouragement to take muscular exercise.

This compared with other education.

"Now, this method of education seems to me—indeed, I know experimentally that it *is*—so vastly superior to that which is in vogue in Edinburgh, that I can never cease to wonder that the barbarisms of the dark ages should still be allowed to exert their influence among us. In Germany, the boys enter the schools which I have described, at the age of eight or nine, and leave them when about fourteen or fifteen, at which period those intended for the learned professions enter the lyceums, preparatory to enrolling their names at the universities. Now, whether is it more rational for a boy, at that period of life, to consume his valuable time in the dreary halls of the High School in acquiring scarcely one useful idea, or to employ it in the pursuit of substantial knowledge? For my own part, I shall always look back on the time which I spent in obtaining a superficial acquaintance with the Latin tongue as a hideous blank in my existence."[1]

Examples of words taught without meaning:

Mr Campbell (one of his earlier teachers) taught me to read and spell after the fashion of those days, that is, I spelled and pronounced the words with a broad Scotch accent, with no regard to stops and intonation; and without once dreaming that the words had a meaning. The discovery that English words in a printed book were signs

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[1] Popular Education, pp. 35–8; and *Phrenological Journal*, vol. vii. (1831–2) p. 375.

In learning to read;

of feelings and ideas did not dawn upon me till several years afterwards. One reason of this was that the only significant speech which I knew was broad Edinburgh Scotch; and it never occurred to any one to explain the meaning of English words to us children in this dialect. An English book was as unintelligible to me after I could pronounce and spell the words of it as was a Latin book before I had learned the rudiments of that language.

In going to church;

I was regularly taken to church in those days; but never understood one word of the sermon. This gave rise to a habit of inattention to spoken as well as to printed language, which was most obstructive to mental improvement. The preacher appeared to me to live and speak in a sphere so far above my condition and comprehension that I never attempted to follow him, but at once retreated within my own consciousness, and there made entertainment for myself by spinning fancies and forming schemes—good, bad, and indifferent,—to be executed when suitable opportunities occurred; or, whenever I was out of the reach of my father's foot and hand, I fell asleep, the refreshment of which was the only solid advantage I derived from my church attendance in those days.[1]

In learning Geography;

In October 1802 (when 14 years of age, after leaving the High School), I was sent to learn Geography and Mathematics under Mr Robert Darling, who had been a teacher of reputation, but was now a very old man—I should suppose about eighty. Mr Darling was not only behind the year 1802 in his method of teaching, but was mentally effete. He had been, however, a man of talent, and he was still very good. I liked and respected him, though I profited little by his instruction. By way of teaching me Geography, he made me repeat, without using the maps, the boundaries, capitals, towns, rivers, and mountains, &c., of all the principal kingdoms, learned by heart from a printed book. It was an offence, in saying the lessons, to use the maps as aids to memory. As I was conscientious, I abstained from studying them, and crammed my memory with pure words to the best of my ability. As, however, my capacity for learning words without meaning, and uninteresting details, was very slender, I forgot yesterday's lesson in learning to-day's; and the result was that, at the end of the course, I was as ignorant of Geography as at the commencement. This was an evil which followed me through life; for, literally, now in my seventieth year, I do not know the Geography of any country, or even of any county in England and Ireland which I have not visited personally, or been led to study by the events of a war or other incidents giving it a temporary interest!

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[1] Autobiography, in his "Life," by Charles Gibbon, vol. i p. 8.

In learning Mathematics;

My mathematical studies under the good old man were equally unfortunately conducted. He showed me how to use the compasses and scale, in drawing figures; but, again, his teaching consisted in hearing me repeat the demonstrations of the first six books of Euclid by heart, without reference to the diagrams; and the same with Trigonometry. The diagrams were before me, but he never explained the *rationale* of them. I did not discover this; and, as he was satisfied with my rattling off the words, I confined my attention to them. These lessons evaporated as soon as they were learned; and thus my mathematical instruction was marred, and never was repaired. I contrived, however, to discover some principles or reasons in Trigonometry; and, having procured a quadrant and a linear tape, I measured the height of the West Church steeple and the top of the new barracks in Edinburgh Castle, above my father's yard, and came pretty near to the recorded truth.[1]

In too heavy tasks;

Andrew Combe's faculties were late in attaining maturity, and, moreover, the system of teaching in his day was little calculated to instruct him. At that time, many schoolmasters only prescribed tasks to be learned by their pupils, the teaching being performed by private tutors; and these schoolmasters limited their own exertions to ascertaining whether the lessons had been learned, and to punishing the scholars who failed. Andrew did not receive the assistance of a tutor, and the tasks were generally beyond the reach of his unaided efforts; hence his poor success is accounted for. It is, therefore, only justice to his teachers to add, that all their scholars were not so backward as he was. But, in his case, another evil existed. The instruction was not adapted to his peculiar combination of faculties. His preceptors taught him Greek and Latin words and rules, but neglected English style and composition. These were supposed to come by nature. Moreover, extremely little of substantive knowledge of things, events, or causes, was communicated; and, even when the classic authors read at the school contained valuable ideas, these were rarely made the subjects of observation or reflection. Words, syntax, and translation were all in all. The

In teaching the Classics;

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[1] Autobiography, in his "Life," by Charles Gibbon, vol. i. p. 56.

boys in whom the Observing organs were large, and particularly the organ of Language, took an interest in this teaching, and profited by it; but Andrew, who could learn chiefly through the medium of Comparison and Causality, remained unimproved; for, in those days, these faculties, particularly that of Causality, had nearly an endless vacation at the High School of Edinburgh, and in the Greek and Latin Classes of the University. Andrew's sister, Jean, with instruction in English Composition, French and Italian, excelled him immeasurably in literary attainments at this period.

The waste of such instruction;

The circumstances now mentioned serve to explain the great interest which Andrew took in the subject of education. In his own case, his parents had spared neither zeal nor expense to give him profitable instruction, and to fit him for a useful and respectable sphere of life; but, from the causes mentioned, his time and their money had been expended with very inadequate advantages.[1]

In teaching reading;

I saw a specimen, in Philadelphia, of an Infant-school, the chief object of which seemed to be instruction in reading; and certainly some of them read beautifully. But I asked them, what was meant by going to the right hand, what by going to the left. I told them to lift up their right hands. About one-half held up the right hand, and the other half the left. I asked them which way was east, which west; they could not tell. A higher class was called up, and read about Jefferson taking the oath of the Constitution. I asked what was meant by an oath, and what by the Constitution; they could not tell. The teacher said it was impossible that they should know these things; but, when they were grown up, she hoped they would find them out. I hope so too. The teacher was a very intelligent lady, and wished to explain the lessons; but the parents thought that the time was lost which was dedicated to explanations, and they complained to the directors of the school! She was then ordered to make "fluent readers" of the children as quickly as possible, which she certainly accomplished.

In the want of useful ideas;

You[2] are generally before us in the education of the people, but you are not so conspicuous for the *quality* as you are for the *quantity* of educational means. If you will inquire into the subjects taught in your schools, you will find, I am afraid, that the number of useful ideas imparted is not so great as it should be. I do not undervalue a knowledge of words; but to impart a knowledge of useful ideas should be the great object. You pay your money. Why do you not take care to have your money's worth?[1]

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[1] Life of Andrew Combe, p. 28.

[2] Spoken to an American audience, in 1838.

In the case of Gaelic children;

In my lectures on education, I adverted to the errors of this mode of teaching words without meaning, and told my audience that it reminded me of the mode of teaching English in a certain Highland school in Scotland. The children, whose vernacular tongue was Gaelic, were taught to spell, pronounce, and read English correctly and fluently, and, at a public examination, they displayed such proficiency, that the clergymen present were about to compliment the teacher publicly on his meritorious exertions; when a friend of mine, one of the proprietors of the parish, struck by the mechanical tone of the reading, put several questions to the children regarding the signification of the passages which they had read. He found them ignorant of the meaning of the words. The teacher had omitted to translate the English into Gaelic, and, although they could read, and pronounce the words, they did not understand the former language.[2]

In too difficult books;

The children in the Philadelphia schools are, to some extent, in a similar condition; they read works on the history of America and other subjects, the language of which is so far superior to the expressions contained in their domestic vocabulary, that, while unexplained, it is to them a foreign tongue.[3]

In learning for the sake of display;

There is a wide interval between knowledge and practice. In one female seminary in which Dr. Combe's "Physiology"[4] (with questions appended to the chapters) is used as a class-book, its rules appeared to me to be violated, in the very act of teaching them; that is to say, the brains of the young ladies were strained by excessive tasks, and by undue excitement of the spirit of emulation. The distinction between *instructing* and *training* is still imperfectly understood, both in the United States and in Great Britain. These young ladies were taught to repeat the laws of health, but they were not trained to carry them into practice, in their daily habits.

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[1] American Lectures, edited by Boardman, p. 346.

[2] See this case mentioned, p. 84; also in article on Secular Education, in *Westminster Review* (p. 7) for July, 1852.

[3] America, vol. ii. p. 215.

[4] Dr Andrew Combe's "Principles of Physiology applied to the Preservation of Health," &c. (Edinburgh: Maclachlan & Stewart).

Apparently, their leading objects in learning them were, to to show off their knowledge at the public examinations, prizes, and to establish their reputation for superior talents.

In prepared rote answering;

The pupils of a distinguished teacher in Edinburgh used to the public by the great extent, accuracy, and readiness of thei ledge of history, exhibited at their annual examinations; admiration of their exploits diminished when the secret of hi ing was known. Questions were printed at the end of each and, in reading the work, he desired them to mark certain w the text with a pencil; he added that these constituted the to the questions, which they must learn to repeat promptl ever the questions were asked. They did so; but their kn was not an intellectual conception of the historical even resulted from a mere parrot-like exercise of verbal memo faded as rapidly as it was acquired.[1]

The after effects of such teaching:

In preparing the substance of a lesson;

One anomaly in my mental constitution seemed to pu Adam.[2] Every afternoon, he gave us one or two pages "Roman Antiquities" to be learned, and discoursed of n He did not require us to repeat the words, but merely to s answer to his questions, that we had read the pages and k sense of them. Most boys enjoyed this exercise; but I wa plete dunce in it. I *read* the passages carefully at home, b did not interest me. My intellect had been trained to repea without thinking of their meaning; and I read the "Anti and saw no meaning in them! I could not, therefore, tell t which I did not see, and the *words* were not required. T teaching was aggravated, in my case, by a small organ dividuality, which gave me a feeble capacity for learning Had any one expounded the text to my Reflecting organs, I have mastered it easily.[3]

The defects in my education now became worse than e

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[1] America, vol. ii. pp. 127-8.

[2] The esteemed Rector of the Edinburgh High School from 1768 author of the well-known "Roman Antiquities" and other works o under whom George Combe spent the last years of his school course a he "respected and even loved." See Autobiography, in his "Life" b Gibbon, vol. i. p. 47.

[3] Autobiography, in his "Life" by Charles Gibbon, vol. i. p. 48.

In separating language from thought.

very painfully apparent. I was not dull or stupid: on the contrary, I had intelligent notions concerning the things which had come under my observation and experience, and also a quick apprehension and practical understanding; so much so that, when sent with messages relating to business, I rarely failed to bring back satisfactory and intelligible answers. But, when placed at the desk (he was apprenticed to a lawyer) and furnished with a style book containing a printed form of a simple law paper, with notes instructing me how to fill up the blank spaces in it, with names, dates and sums corresponding to the business in hand, I was completed *derouté.* My faculty of Language had been trained to act on its own account, separate from my Judgment, and, in my new vocation, it could only blunder when acting by itself; for my Reflecting faculties had never been taught to deal logically with language. It is difficult to describe my obtuseness, slowness, and blunderings in this work. I could copy with tolerable correctness, although very slowly, because this required no thinking.[1]

The need of solid instruction in *things.*

I urged on my audience in Philadelphia the indispensable necessity to the welfare of the country, that the education of American children should embrace solid instruction in things, and not consist of words merely; and that *training* also, or *daily discipline of the dispositions,* should be regarded as of great importance to them. I earnestly advised them to invite Mr Wilderspin to visit their country, and to show them a few good Infant and Training schools in operation; after seeing which, they would not long tolerate their present inefficient system. In England, Scotland, and Ireland, the most efficient schools are those which embrace most of his principles and practice.[2]

In all my education, the cultivation of the English language had been deplorably neglected.[3] I had learned to read, and, through the medium of Latin, understood English Grammar; but no attention

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[1] Autobiography, in his "Life" by Charles Gibbon, vol. i. p. 65.

[2] America, vol. ii. p. 217.

[3] Yet he had passed through the High School and the University of Edinburgh! An English master was appointed in the High School only so recently as 1866, though some English lessons had been given before by the classical masters; and the Chair of English Literature was not founded in Edinburgh University till 1762!

The neglect of English in schools.

had been bestowed on my pronunciation, and it was incorrect, vulgar, and slovenly in the extreme. Lessons in English Composition were never dreamt of; and, as to Elocution, I had scarcely heard the term used, and was actually puzzled to know exactly what it meant, when, in May 1804, Mr Dallas (a Writer to the Signet, to whom he was apprenticed), recommended me to attend a course of instruction in that art, for the improvement of my style of reading and speaking. I attended Mr Scott's classes for three months, from 5 to 6 P.M., five evenings in the week, and was much interested and benefited. He was a refined natural gentleman, aged, but still vigorous. He had published the text book which we used, under the title of "the Beauties of Eminent Writers;" and it fulfilled the pretension of its title. It consisted of extracts, selected with taste and judgment, from the best prose and poetical literature of England.

Varieties of reading.

Mr Scott read one of the passages aloud, and each of the class, consisting of seven or eight youths of my own age, read it aloud after him. I was struck with the differences in the manner of reading of my class-fellows. Some imitated our instructor admirably, without appearing to catch an idea of the sense of the passage; others gave meaning and their own expression to it, but could never reflect Mr Scott's tone and expression correctly; while one or two read words only, without tone, expression, or intelligence. I belonged to the second category, and could never imitate Mr Scott, although he occasionally commended the intelligence of my reading in my own way.[1]

Verse-making defensible only for certain persons.

Horace has said, "*Poeta nascitur non fit,*" but our Academicians[2] pique themselves on showing that a poet can be formed *etiam invita Minerva.* Let us reflect on the mode generally adopted in teaching our own language. Is it held by any one competent judge of the matter, that a capacity for Verse-making is indispensable for the perception of its structure, its beauties, its application? Shall it be said that such men as Hume, or Robertson, or Gibbon, who, as far as we know, never wrote a single verse in their lives, were unacquainted with the powers of that instrument which they used so nobly? While we argue thus, however, we have every disposition to do justice to the *longs* and the *shorts.* We distinctly allow, that those who have a natural talent for classical literature should attend to the quantity of Greek and Latin syllables, and that too so minutely that, were Porson himself present, he should discover no cause for disapprobation; but we maintain, that only those who have a natural talent for this branch of learning should be required to pursue it. It is probable, besides, that the power of learning quantities may exist, without the presence of the higher degree of ability necessary for verse making; and consequently, that it is no more necessary to write verses in order to become acquainted with the rhythm of Greek and Latin poetry, than to compose English metre in order to read that language with ease and grace.

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[1] Autobiography, in his "Life" by Charles Gibbon, vol. i. p. 66.

[2] Spoken of the Edinburgh Academy. See note, p. 88.

Its untenableness as a general exercise.

Even admitting that a certain kind of talent for making verses could be attained where nature has been sparing in her endowments, still it would be a mere mechanical facility of placing words in metrical apposition, utterly without value, if the spirit of poetry were not present to confer life and energy. We are surprised at the estimation in which such a power is held by men otherwise intelligent. The instant that an attempt should be made to prescribe the composition of English verses to boys, with the view of perfecting them in the reading of their native language, the absurdity of the notion would become too apparent to be resisted. To the phrenologist who is accustomed to discriminate minutely the sources of native talent, the practice of verse-making, when prescribed to individuals deficient in the particular powers on which it depends, seems equally absurd as the endeavour would be to compel a person who cannot distinguish flats from sharps, to compose music in the style of Rossini.[1]

4. ON MEMORY AND ITS TRAINING.

Memory: What faculties possess it.

Memory is a mode of action of the faculties. In most individuals, the mind has no power of calling up, into fresh existence, the emotions experienced by means of the Propensities and Sentiments, by merely willing them to be felt, and hence we hold these faculties not to possess memory.[2] The ideas, however, formed by the Knowing and Reflecting faculties, can be produced by an act of recollection, and these powers are, therefore, said to have Memory. Memory is thus merely a mode of action of the Knowing and Reflecting faculties.

Each organ enables the mind to recall the impressions which it

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[1] *Phrenological Journal*, vol. ii. (1824–5) p. 235.

[2] Reasons for this opinion will be found in George Combe's System of Phrenology, vol. ii. p. 193.

Its nature and action.

served at first to receive.[1] Thus, the organ of Tune will recall notes formerly heard, and give the memory of music. Form will recall figures previously observed; it will give the memory of persons, pictures, and crystals, and will produce a talent for becoming learned in matters connected with such objects. Individuality and Eventuality, large, will confer memory for objects and events, and render a person skilled in history, both natural and civil. A person in whom Causality is powerful, will possess a natural memory for Metaphysics. Hence there may be as many kinds of memory as there are Knowing and Reflecting faculties; and an individual may have great memory for one class of ideas, and very little for another: George Bidder[2] had an almost inconceivable power of recollecting arithmetical calculations, while, in memory of history or languages, he did not surpass ordinary men. As the recollection of objects and occurrences is commonly meant, in popular language, by "a great memory," individuals so gifted will generally be found to possess a good development of Individuality, Eventuality, and probably of Language.

Retentiveness of memory.

There appears to be a quality of brain which gives retentiveness to memory, in consequence of which one individual will retain impressions much longer than another, although the size and combination of their organs be the same. It is said that Sir Walter Scott possessed this characteristic in a high degree; but the cause of it is unknown. This fact does not invalidate the theory of Memory now given: because, in every individual, the power of retaining one kind of impressions is greater than that of retaining another, and this power bears a uniform relation to the size of the organs. The celebrated Cuvier affords another striking illustration of this remark. He possessed the quality of retentiveness, the cause of which is unknown, in an extraordinary degree; but the power was strongest in his largest intellectual organs.[3]

The science of Mnemonics is founded on the power of the mind to associate ideas with other ideas, or with arbitrary signs. In devising means for aiding the memory, it should be constantly kept in view, that every individual will, with the greatest ease, associate ideas with such external objects as he has the greatest natural facility in perceiving. Sometimes portions of space are used as means for recalling ideas which we wish to remember. The room, for example, is divided, in imagination, into compartments, and the first topic of the discourse is placed in the first compartment, the second in the second, and so on; in the hope that, by thinking on the spaces, the different heads of the discourse with which they were associated may be recalled. It is, however, only when Locality is large that such a devise can be serviceable; because, if this faculty be weak, it will be as difficult to imagine and recollect the positions of the compartments as the discourse itself. If, in like manner, numbers be resorted to as the connecting medium, with the view that, on hearing one fact which we wish to recollect, we shall associate it with the number one, and, on hearing another, we shall associate it with number two,—it is certain that, unless the organ of Number be large, this will be a more difficult task than that of simply recollecting the facts themselves. Hence, different means to aid recollection should be used for different individuals. He who has Number most powerful, will associate words most easily with numbers; he who has Form most energetic, will associate words most easily with shapes; he who has Locality most vigorous, will associate words most easily with positions; and he who has Tune most powerful, will associate words most easily with musical notes.

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[1] Or, as he elsewhere expresses it, "Every Intellectual faculty has its own Memory. Suppose I call to mind that I saw a man in Broadway yesterday, at twelve o'clock: Form, Size, Colouring, and Individuality, are employed in recollecting his person; Locality, in recollecting the place; and Time, in recollecting the hour." American Lectures, edited by Boardman, p. 288.

[2] See note on Bidder, p. 432.

[3] System of Phrenology, vol. ii. pp. 220–221.

The true principles of Mnemonics.

Different memory aids needed for different persons.

Hence, also, the influence of Associations on our Judgment is accounted for. He in whom Veneration is powerful, and to whom the image of a saint has been from infancy presented as an object to be venerated, experiences an instantaneous and involuntary emotion of Veneration every time the image is presented to him, or a conception of it formed; because it is now the sign which excites in him that emotion, altogether independently of reflection Until we can break this association, and prevent the conception of the image from operating as a sign to excite the faculty of Veneration, we shall never succeed in bringing his Understanding to examine the real attributes of the object itself, and to perceive its want of every quality that ought justly to be venerated. In the same way, when a person is in love, the perception or conception of the beloved object stirs up the faculties which feel, into vivid action; the consequent emotions are so delightful, and the Reflecting faculties have so little consciousness that the real source of the fascination is in

The influence of Association on the Reflecting faculties.

The means of breaking this influence.

the faculties which feel, that it is impossible to make the lover see the object of his passion with the eyes of a disinterested spectator. If we could once break the association between the object and the faculties which feel, the Reflecting faculties could perform their functions faithfully, and the beloved object would be seen in the true colours. But, while we are unable to break this link, and to prevent this fascination, we may reason *ad sempiternum*, and our conclusions will never appear to be sound; because the premises, that is, the appearance of the object, will never be the same to the party most interested in the argument, and to us. Thus, the associations which mislead the Judgment and perpetuate prejudices, are those of words or things with *Feelings* or *Sentiments*, and not associations of conceptions with conceptions, or merely of ideas with ideas. The whole classes of ideas formed by the Knowing and Reflecting faculties may be associated *ad infinitum*, and no moral prejudices will arise, if these ideas do not become linked with the Propensities and Sentiments.

The action of Association and Memory dependent on the faculties;

In studying the laws of Association, therefore, we must go beyond the ideas themselves and consider the organs and faculties which form them. If these be kept in view, the phenomena of Association will appear more lucid and intelligible; and we shall find nature confirming our principles, because they will be founded on her laws. In regard to the organs, I may observe that there must be a state of an organ corresponding to every idea formed, and to every emotion felt; and that, by repetition of an act, the organs acquire an increased tendency to enter into the same states, in the same order of succession. If, for instance, the organ of Language has been trained to repeat certain verses, or the organ of Tune to reproduce a certain air, a tendency will be produced in the organ to renew the same series of actions, in other words, to repeat the verses or reproduce the tune with increased facility and precision. If we direct our attention to the combinations of the organs, we shall see the individual who has the *Reflecting* organs most powerful, associating ideas according to the relation of necessary consequence; we shall perceive him who has the *Knowing* organs most largely developed, associating ideas according to the relations of time, place, and circumstances;[1] and very often, though not always, we shall find each individual associating with most facility, and recollecting most perfectly, those ideas which minister to the gratification of his

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[1] See examples of Association of colours, on page 60, vol. ii., of my System of Phrenology.—(G. C.).

Not on the relations of mere ideas.

most powerful Propensities or Sentiments. If we seek only for relations among individual ideas themselves, or for general laws, according to which ideas are associated in all individuals, our researches will never be crowned with success. No stronger proof of this fact could be found than the circumstance, that, although different individuals will use the same process of reasoning to produce the same conviction, yet no two will state their arguments in the same words, or make use of the same illustrations. The general similarity of the reasoning process depends on the similarity of the constitution of the faculties which reason; but differences in words and illustrations arise from particular individuals possessing different combination of organs, and being placed in different circumstances, which afford materials of thought in some degree peculiar to each.[1]

The memory of names.

Some individuals in whom Language is large state, as an objection, that they have a bad memory of names; but they will be found in general to have a deficient memory of the objects which the names indicate. For example, if they cannot recollect names of persons, they will have deficient Form and Individuality; and if they cannot recollect names of tunes, they will be deficient in Tune. The defect lies in the faculty which apprehends and recollects the primitive idea, for which Language recollects the name; and it is quite conceivable that, although Language may be powerful, yet it may not furnish names, as mere words, when the thing signified is not present in the mind.[2]

The memory of musi

In the *Phrenological Journal*, vol. xv. p. 137, Mr Hytche remarks that, "Amongst the many distinguished men who have been wholly or partially devoid of any taste for music, may be mentioned, Johnson, Burke, Windham, Fox, Mackintosh, and Charles Lamb; and that, nevertheless, the speeches of Burke, Windham, and Fox were delivered with graceful intonation of voice, and the writings of Johnson, Mackintosh, and Lamb were well modulated." He mentions also similar cases known to himself. Mr Hytche considers that the organ of Tune, which he names "Tone," "is not merely a music-judging or tune-learning organ; but that its province is to appreciate sounds," and he is disposed to ascribe the perception of rhythm to it; but he does not appear to me to account in a satisfactory manner for the cases cited by himself, in which the power of rhythm was strong in conjunction with deficiency of musical perception. I may be allowed to mention that, in my own head, the organ of Tune is small; that I am able to *perceive* melody, and to enjoy it, while the instrument is sounding, but have no *memory* of it, being incapable of recalling in my own mind, or reproducing, the simplest musical note. My organ of Time is better developed, and I am more alive to the quality of time in music. When a boy, I could scan with facility every variety of Latin verses, and give the rules, which many of my schoolfellows who greatly excelled me in other exercises could never learn to do. I have not been able to determine satisfactorily on what organs this talent depends.[1]

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[1] System of Phrenology, vol. ii. pp. 254–7.

[2] See remarks by Dr A. Combe on the talent for recollecting names, *Phrenological Journal*, vol. iii. p. 120.—(G. C.).

5. ON THE NATURAL ORDER OF IDEAS AND SUBJECTS IN TEACHING.

The order of ideas in examining any object.

The external world and the human mind, having emanated from the same Creator, should be found wisely adapted to each other; and this accordingly appears, in an eminent degree, to be the case. If the reader will direct his attention to any natural or artificial object, and consider—

1st, Its existence;
2nd, Its form;
3rd, Its size;
4th, Its weight;
5th, Its locality, or position in space;
6th, The number of its parts;
7th, The order, or physical arrangement of its parts;
8th, The changes which it undergoes;
9th, The periods of time within which these take place;
10th, The analogies and differences between the object under consideration and other objects;
11th, The effects which it produces; and,

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[1] System of Phrenology, vol. ii. pp. 144–6. On his power of scanning, he afterwards remarks, in his Autobiography: "My impression is that the Reflecting organs penetrated to the perception of system and order in the recurrence of the long and short syllables, and it was through them that I succeeded. Certain it is, and perhaps the fact is anomalous, that I had not a quick ear for the longs and shorts in English poetry, and, when I tried to write verses, made a sorry figure." He says that, in one of his school books, he found a lucid systematic explanation of the structure of the different kinds of verse, comprehended it easily, got the rules by heart, and could apply them *ad libitum* to every kind of verse.—"Life," by Charles Gibbon, vol. i. p. 48.

Lastly, If he will designate the assemblage of ideas thus acquired by a name—he will find that he has obtained a tolerably complete notion of the object of his contemplation, and is able to express it.

This is the order for teaching the Sciences.

This order should be followed in teaching the sciences. Botany and Mineralogy are rendered intolerably tedious and uninteresting to many persons, who really possess sufficient natural talents for studying them, in consequence of names and classifications being erroneously taught as the chief objects to be attained. A better method would be, to make the pupil acquainted with his own mental powers; and to furnish him with experimental knowledge that these stand in definite relations to external objects, and feel a positive pleasure in contemplating them. His attention should then be directed to the existence of the object, as in itself interesting to Individuality; to its form, as interesting to the faculty of Form; to its colour, as pleasing to the faculty of Colour; and so forth with its other qualities: while the name, order, genus, and species, should be taught, in the last place, as designative merely of the qualities and relationship of the objects with which he has become conversant.

The advantages of such teaching.

Practice in this mode of tuition will establish its advantages. The mind which, unexercised, regards all forms not extravagantly ugly or beautiful, with indifference, will soon experience delight in discriminating minute degrees of elegance and expression; and a similar effect will follow the cultivation of the other powers. The larger the organs, the greater will be the delight experienced in study; but, even with a moderate development, much may be attained. Nor is it necessary to resort to schools and colleges for this exercise of the Intellect. Objects in nature and art calculated to stimulate our faculties everywhere abound; and if the reader, as he walks in the town or country, will actively apply his various powers in the manner now pointed out, he will find innumerable sources of pleasure within his reach, although he should not know scientific names and classifications.[1]

Language should not be first or chief.

As science is, at present, taught, it tells chiefly that such and such objects exist, where they exist, and their distinguishing properties; and the great aim of the preceptor is to teach the arrangements into orders, genera, and species. Men in whom Individuality is large, delight in knowing mere existence. Nomenclature, in consequence, or ideas addressed to Individuality, Order and Language, are the chief points taught.

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[1] System of Phrenology, vol. ii. p. 180.

The faculties that should be addressed.

To amend this, the information given should be:

1st, The object exists—Individuality.

2nd, Its Form, Colour, Order of parts, and Number of parts.

3rd, The places where it is found—Locality.

4th, The changes which it undergoes—Eventuality—such as the Physiology of plants.

5th, The effects which it can produce on other substances, and which they can produce on it. This is Chemistry, which treats of the minute properties of bodies and their mutual influence—such as the effects of heat, their mixture together, &c. It is addressed chiefly to Eventuality and Causality.[1]

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[On the General Principles of Education, and on Intellectual Education, the following works, amongst others, have appeared:—

Educational works based on Phrenology.

I. Works written on a Phrenological Basis.—George Combe's "System of Phrenology" (Edinburgh: Maclachlan & Stewart) which gives fuller details and illustrations of the principles contained in this work; Spurzheim's "Elementary Principles of Education," an admirable work, and his various works on Phrenology; James Simpson's "Philosophy of Education," 2d edit. (Edinburgh: A. & C. Black); "Life and Works of Horace Mann," 5 vols., by Mrs Mann (Boston, U.S.: H. B. Fuller), especially his Lectures and Reports, and his "Educational Tour," edited by Professor Hodgson, 4th edit. (London: Simpkin, Marshall, & Co.); "Education and Self-Improvement," by O. S. Fowler (New York: Fowler & Wells—London, 337 Strand); Sir George S. Mackenzie's "Principles of Education;" Charles Bray's "Education of the Feelings," 4th edit. (Longmans); John Hecker's "Scientific Basis of Education," 2d edit. (New York, 1868); the Rev. Joseph A. Warne's "Phrenology in the Family, or the Utility of Phrenology in Early Domestic Training," an American work strongly recommended by George Combe, republished in this country by Maclachlan & Stewart, Edinburgh, now out of print, but deserving republication; Smidt's educational works, chiefly his "Geschichte der Pädagogik" (1862, 4 vols.), translated in Barnard's *American Journal of Education;* Dr Richard Poole's "Essay on Education," originally published in

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[1] From MSS.

1819, in the "Encyclopædia Edinensis;" Lalor's Prize Essay on Education; numerous articles of great value in the *Phrenological Journal*, 20 vols., in which education always formed a special topic, and which did much to help educational progress in this country early in the century.

Based on the common Philosophy: On the general principles;

II. Works written from the common Philosophical Basis:—1. Works on the General Principles.—Out of a host of varying value—The older standard works of Ascham, Milton, and Locke; Herbert Spencer's "Education" (Williams & Norgate); Dr Carpenter's "Mental Physiology" (London: Henry S. King); Taine's "On Intelligence" (London: Reeves & Co.); Edgeworths' "Practical Education;" Taylor's "Home Education;" Stow's "Training System;" Currie's "Common School Education" and "Early and Infant School Education" (Edinburgh: Thos. Laurie); Gill's "School Management" and "Systems of Education" (Longmans); Payne's lectures on "Froebel," "Pestalozzi," and "Jacotot," "The Science and Art of Education," and "Visit to German Schools" (London: Henry S. King); "Observations upon Liberal Education" (London, 1742), by George Turnbull, LL.D., containing admirable matter; Jacob Abbott's "Teacher;" Miss Martineau's "Household Education" (London: H. S. King); Curwen's "Teacher's Manual," full of excellent matter on general education (London Tonic Sol-Fa Agency); Dunn's "Principles of Teaching" (London: Sunday School Union); Pillans' "Contributions to the Cause of Education;" Leitch's "Practical Educationists" (Glasgow: Maclehose); Krüsi's "Life and Work of Pestalozzi" (Cincinnati: Wilson, Hinkle, & Co.); Quick's "Essays on Educational Reformers;" Ogle's "Theory and Practice of Education, as deducible from Familiar Truths concerning the Nature of Man" (London: D. Nutt); Thring's "Education and School" (London: Macmillan); Emily Shirreff's "Intellectual Education" (London: Parker & Son); Oppler's "Lectures on Education" (Longmans); Gall's "Philosophy of Education" (Edinburgh: Gall & Son); Calderwood's "On Teaching, its Ends and Means" (Edinburgh: Douglas); Professor Jardine's "Philosophical Education;" Dr Biber's "Lectures on Education;" Bryce's "Lectures on Early Education" (Belfast: Alex. Mayne); Tate's "Philosophy of Education;" Hugo Reid's "Principles of Education" (Longmans); P. G. Hamerton's "The Intellectual Life" (London: Macmillan); Henry Barnard's "National Education in Europe;" Bartley's "Schools for the

British authors on the principles of education;

People" (London: Bell & Daldy); Kiddle & Schem's "Cyclopædia of Education" (New York: E. Steiger—London: Sampson, Low, & Co.), especially *s.vv.* Education, Instruction, Intellectual Education, Object Teaching, Pestalozzi, Kindergarten, which are superior articles: Papers in the publications of the Central Society of Education (London: Taylor & Walton); in *The Schoolmaster*, published by Society for Useful Knowledge (London: Charles Knight); in *Papers for the Schoolmaster;* in the *Educational Times*, of great value; in the *Quarterly Journal of Education:* in Reports of H.M. Inspectors of Schools, published in the Annual Reports of the Committee of Council of Education Department; the various Standard Treatises on Mental Philosophy, of Locke, Sir William Hamilton, Reid, Dugald Stewart, Brown, Mill, Bain, Morell, Abercrombie, &c.

Foreign authors.

Of Foreign Writers:—Rousseau's "Emile," translated into English as "Emilius and Julia, or a New System of Education;" Pestalozzi's "Evenings of a Recluse," "Leonard and Gertrude," "How Gertrude teaches her Children," "Letters on Early Education," addressed to J. Greaves (now in English, in whole or part); Richter's "Levana, or the Doctrine of Education" (more than one translation in English; one published, 1866, by Ticknor and Fields, Boston, U.S.); Froebel's Pedagogical Works, edited by Lange (3 vols. Berlin); Marcel on "Language," a valuable treatise on the principles of education; Madame Necker's "Progressive Education," now in English; Abbé Girard's "La Langue Maternelle," translated by Lord Ebrington; Willm's "Education of the People," translated, with very good introduction, by Professor Nichol (Glasgow: William Lang); Rosenkranz's "Die Pädagogik als System," translated by Anna C. Bracket (St Louis, 1873); Herbart's "Allgemeine Pädagogik," "Aphorismen zur Pädagogik," "Umriss pädagogischer Vorlesungen," now collected in 2 vols., edited by Willmann (Leipsic); Beneke's Erziehungs-und Unterrichtslehre; Schwarz's "Erziehungslehre;" Dittes's "Schule der pädagogik; and other works on Pedagogy and Method; Diesterweg's "Wegweiser zur Bildung für deutsche Lehrer" (5th edit. Essen); Schmid's great work, the "Encylopädie des gesammten Erziehungs-und Unterrichtswesens." A great part of these German works has been translated in the *American Journal of Education*, afterwards called the *Annals of Education*, and in Henry Barnard's "German Teachers and Educators," in his "Educational Biography."

2. Works on special parts of Education and on Method:—Many

Authors on Method.

hose already mentioned take up Method, especially Stow,
rie, Gill, Tate, Curwen, and the serials: "Modern Culture,"
ed by Dr Youmans (London: Macmillan); Morrison's "School
agement" (Glasgow: William Hamilton); Eliza A. Youmans'
he Culture of the Observing Powers of Children," edited by
ne (London: H. S. King); "Essays on a Liberal Education,"
ed by Farrar (London: Macmillan); S. S. Laurie's "Primary
ication" (Edinburgh: Blackwood); Wilkin's "National Educa-
in Greece" (London: Strahan & Co.); Dr Donaldson's "Lec-
s on Education" (Edinburgh: A. & C. Black); Wiese's "Ger-
Letters on English Education" (London: Collins); Vicesimus
ox's Essays "On a Liberal Education;" Young's "Teachers'
ual for Infant Schools" (Dublin: M'Glashan); "Infant Edu-
on" (W. & R. Chambers); the Mayos' "Object Lessons," and
er works; Wood's "Account of the Edinburgh Sessional
ool;" and the educationally historical works:—Wilderspin's
nfant System," "Importance of Educating the Infant Poor,"
"Early Discipline Illustrated;" Bell's "Experiments in Edu-
on," and his "Elements of Tuition," in two parts, containing the
nciples of the Madras System; Lancaster's "Improvements in
ucation."—*Edit.*]

CHAPTER V.

EXAMPLES OF TEACHING CERTAIN SUBJECTS.

The value of these examples.

[The following examples by George Combe of the teaching of certain subjects are interesting as showing (1) How certain subjects, little known as yet in our schools, may be taught—Physiology, Social Science, and Phrenology; (2) How subjects which are generally deemed abstruse and too difficult and advanced for children, and, if taught at all, reserved for higher schools and upper classes, may be simply and skilfully treated, so as to make them easily comprehensible and interesting to young children, and these the children of our common schools; (3) How the Moral and Religious element which George Combe considers so important, and so strenuously insists should pervade all subjects and all lessons, may be naturally and effectively introduced into the teaching of these subjects.—*Edit.*]

1. LESSON ON PHYSIOLOGY.

The physical functions described.

"The highest class in the Williams School in Edinburgh, founded by George Combe,[1] underwent a most searching examination by Mr Combe in Physiology, particularly with regard to the bones, muscles, skin, heart, lungs, blood-vessels, absorbent vessels, the stomach, liver, intestines, and other digestive organs, and they showed a knowledge of the local situations, general structure, and functions of all these parts. This was by far the most interesting part of the examination, and the pupils acquitted themselves to the admiration of all present, as was evinced by the frequent manifestations of applause. They were then examined on *the uses* of this knowledge. An infant and an adult skeleton, for example, were placed before them, and they were asked how the one grew to the size of the other. They described the absorption of the waste matter of the body by the absorbent vessels, and its discharge by the skin, bowels, bladder, and lungs; then the renovation of the textures by the deposition of new matter by the blood-vessels, bone being given bone, muscle to muscle, nerve to nerve, &c., where wanted, in der to renew waste and complete growth. They next described w wholesome food, in proper quantity, is necessary to supply the ood with the elements of these structures, and pointed out the nsequences to growth and to health of too little, too much, and of -chosen food; they described the necessity of fresh air to invigo- te the blood, of cleanliness to prevent its being contaminated by irt absorbed through the skin, and of exercise to preserve the irculation of all the vessels in a state of activity.

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[1] An account of this school and its teaching is given, p. 201.

The Religious element introduced.

"They were next asked who made all these vessels, bones, and ther parts, and appointed their uses? They answered 'God.' Did God intend them for your happiness?'—'Yes.' 'Can you scape from the painful consequences of neglecting cleanliness, fresh ir, exercise, and temperence?'—'No.' 'Why not?'—Because od has made the organs, and made them act as they do; and they t well or ill, according to our conduct.' 'Are you thus living der God's laws *here* and *now?*'—'Yes.' 'Do you need to die fore you come into God's presence and under His law?'—'No; are under His law here, and He is now present executing His w.' "[1]

2. LESSONS ON SOCIAL SCIENCE.

Social Science defined.

"Mr Combe commenced the examination of the same school in ay 1850, by mentioning that, by Social Economy, was meant an position of the laws of nature, by which wealth was created and stributed. These laws had their foundation in the nature of man, the constitution of the external world, and in the relations of the e of these to the other. While individuals differed in their views regard to these foundations of the science, they could not agree on e superstructure. In this school, therefore, the children had been ght the structure and functions of the human body, the structure d functions of the brain, as the index of the mental faculties, the ture of the physical world, and, finally, the adaptations of the first o to the latter. He then questioned the children upon the ysical, organic, and moral laws, instituted by the Creator, of all of ich the children supplied several illustrations. They were next estioned as to the manner in which man may discover these laws, d the necessity under which he is placed of accommodating his

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[1] From the first Report of the Williams School, p. 14. Extracted from the *tsman* of April 7, 1849.

Man's condition in the world.

conduct to them. They described the condition in which man enters the world compared with that of the lower animals. In their answers, they stated that he comes into life a helpless being, unclothed and unskilled, while the lower animals are clothed; and many, like the swallow, the bee, and the beaver, receive directly from the Creator, without need of apprenticeship, all the skill and all the knowledge of materials necessary for building habitations, and also for collecting food suited to their wants;—that, as a compensation for the absence of these gifts, God has presented to man soil capable when laboured of yielding food; rocks, metals, and trees, and other materials capable of being made into houses; animals bearing fleeces and silk, with flax, cotton, and other elements fit for garments;—and that, to avail himself of these, he must acquire, first, knowledge of the capabilities of these objects, next, skill, and finally, he must apply his bodily and mental powers to the duty of turning them to his own advantage; and that his success will bear a proportion to the degree in which he complies with all these requisites.

Work governed by organisation.

'Are all equally endowed with the powers requisite for gaining skill and working efficiently?'—'No.' 'How do you prove this?' The children here referred to the skeleton and to several casts of human heads, and said that some men have larger and stronger bones, lungs, digestive organs, and brains than others. 'Supposing all equally ignorant or equally instructed, Which of these would be able to extract from the earth the greatest amount of produce and build the best habitations?'—'Those with the highest organisation.' The case of two men was supposed—one with strong intellect and well informed, but with a weak body; the other with a weak mind and ignorant, but with a strong body—both engaged in the cultivation of the land; and the children were questioned as to their comparative powers of production, their position at the end of ten years, and the manner in which they could best co-operate. Their answers affirmed, that the man with superior knowledge and mental power would invent machines and train animals to help him, while the other could merely make use of his own bodily strength; that, at the end of the ten years, the first would have saved the most wealth; that both would gain, if the latter were to place himself under the guidance of the former, and receive wages for his labour, by which arrangement he could produce more than when left to himself. In this manner, and with the aid of additional examples, the distinction between the capitalist and the labourer was shown to be a result of the natural inequalities in the capacities of men for producing and accumulating wealth."[1]

George Combe thus describes a lesson he heard given on Social Science, in 1849, by Mr William Ellis, in Lovett's School, Holborn, London, one of the first schools in which Mr Ellis began the teaching of this subject[2] :—

Lesson on Social Science by Mr Ellis.

"In previous lessons, Mr Ellis had explained the nature and origin of Wealth, and the laws of its distribution; and, on this occasion, the subject was "Capital," its employment and returns. Mr Ellis, by his clear and happy illustrations, enabled the children to understand (as was proved by their answers, for he did not *lecture*, but explain and question), the difference between " gross and nett profit." "Gross profit," said he, " is the total increase made to capital by its employment." It includes—1st, remuneration to its owner for his *skill* and *labour* in applying it to produce wealth; 2d, compensation for its use; and, 3d, compensation for the *risk* he runs of losing it. Suppose, said he, that a man has £1000, and buys land with it, and cultivates the land, and sells the produce, all by his own skill and labour, he would then receive *all* the profit. But, suppose again, that a number of persons, such as, surgeons, lawyers, clergymen, and ladies, have each spare capital from which they desire to derive profit, but that some want skill and others leisure to employ it in a profitable undertaking themselves; they may put all their sums together and embark them in making a railroad. They must then have a manager and pay directors, who understand the business, and are willing to devote their time to it; and the question is, What share of the profits are the owners of the railroad entitled to? They furnish the capital, and run the risk of the undertaking turning out profitable or unprofitable; but they devote no personal attention to its concerns. They must pay the portion which corresponds to the first head, to the manager and directors, and they are entitled to expect the returns belonging to the second and third heads, viz., the *use* of the capital, and the *risk* of losing it, for themselves. Suppose that there are other persons who are more cautious, and desire to avoid risk altogether—what do they do? They lend their capital to the persons who desire to make the railroad, and take security for its repayment with interest. The interest is the of the profit which compensates them for giving to the othe use of their capital, without superintendence and without risk. Ellis enforced the principle that, wherever the owner of c receives or is promised a higher return for its use than the c rate of interest, he is receiving or bargaining for the *risk of los* and occasionally he does lose it—a circumstance which is too attended to by many persons who place their capital in rail Mr Ellis then applied the same principles to ordinary trade showed whence the profits of them arose; and how, when s persons are concerned, they are divided.[1]

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[1] From the second Report of the Williams School, p. 26.

[2] See an account of Lovett's School, p. 244; and of other matters during this visit to London, p. 228.

3. LESSON ON PHYSIOLOGY AND SOCIAL ECONOMY COMBINED

Circumstances under which the lesson was given.

The application of Physiology to the elucidation of Social Eco is also an important practical object. This may be shown by a report of a lesson which, in August 1857, I gave to a class of ch of the working-classes in the agricultural village of Charlton in setshire, when on a visit to my friend Mr Bastard, who has much for the individual and social improvement of the peo that place.[2] The lesson was intended to show that this ki instruction is not only intelligible, but interesting and usef young persons in every rank of life. I was honoured by the at ance of the curate and schoolmaster, the smith and carpenter nearly thirty of the adult population of the village. The lesso *improvised* for the occasion, and assumed the form of a convers the questions being put to the pupils in succession. It was rep in September, in a school for children of the middle class, ke the Rev. Mr M'Alester at Holywood, near Belfast. There, s new questions were put, and higher answers elicited than in Cha and both lessons are combined in this report. It is proper to that, to the more difficult questions, the answers were drawn o suggestions and illustrations, which it would be tedious to c and which, in each instance, must be varied to suit the intelli of the pupils.

The subject introduced.

"Did you get your breakfast to-day?"—"Yes, sir." "At hour?"—"At eight o'clock." "Of what did it consist?"— had bread and milk."

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[1] Letter to *Scotsman* of 17th November 1849.

[2] See an account of the Club and School in Charlton, and of this p. 248; also in his "Life," by Charles Gibbon, vol. ii. p. 362.

"Have you had dinner?"—"Yes, sir." "What had you for dinner?" Some said bread and cheese, some bread and milk, &c. "At what hour?"—"At one o'clock."

"Why did you eat dinner so soon after breakfast?" Here there was a pause; at last a boy said, "Because I was hungry, sir."

"Quite right. But *why* were you hungry so soon?" No answer; a pause; still no answer. "Would you like to know *why* you were hungry so soon?" All shouted, "Yes, sir; please tell us."

"Have any of you a knife?" Here several pocket-knives in various stages of wear were presented. One much worn in the joint, and one not perceptibly worn, were selected.

"Do you see any difference in the joints of these two knives?" They were handed to each pupil and examined. "Yes, sir; one is worn round and the other is quite straight in the joint." "Right. But *what caused* that one to become round?"—"Much opening and shutting; this wore away the iron of the joint by rubbing against the spring." "Does the axle of a cart-wheel wear away?"—"Yes, sir." "Why?"—"Also by rubbing." "Do they put grease on it?"—"Yes." "For what purpose?"—"To make the wheel move easy, and rub less."

The body contains a skeleton;

"Now, does anything resembling this go on in your body?" A pause; no answer. "Strip off your jackets." This was instantly done, accompanied by a shout of laughter. "Feel, with your left hand, the shoulder-joint of the right arm, and swing the right arm, extended at full length, round and round. What do you feel?"—"The top of the arm moving at a joint." A diagram of the human skeleton was here unrolled, and the structure of the ball-and-socket joint of the shoulder explained to them. "Is there anything like this in your arm?"—"Yes, sir; it is the same as in the drawing." "Now, suppose that this were a real skeleton of bone, and I should swing its arm round and round for a day, what would ensue?"—"The motion would wear the bones in the joint." Here the secretion, in the socket of the joint, of oil to lessen the friction of the cartilages coating the bones, was explained. "Will this altogether prevent the waste?"—"No, the cart-axle has oil, yet it wears."

And muscles.

The hinge joint of the elbow, and several other joints, were shown on the diagram, to give them a notion of the extent of surface over which this kind of waste takes place. "Now, with your right hand, grasp firm the thick part of the left fore-arm, and open and shut the hand, and move it forcibly in every way you can: Do you feel any thing moving below the skin?"—"Yes, sir; something rises and falls." "What is it?" No answer. "Would you like to know?"—"Very much." Another diagram was then unrolled, showing the superficial layer of muscles stript off the skin. "Do you see here the part of your arm that rises and falls?"—"Yes, sir; it is flesh." The structure and use of the muscles were now explained to them; namely, that each consists of numerous fine fibres, or threads of flesh, bound up in a common sheath, that their ends are attached to the bones, and that, by contracting and relaxing, they move the limbs. "If these fibres rub against each other, and contract and relax, during a whole day, as happens when a man digs with a spade or guides the shafts of a plough, will they wear?" —"Yes, sir."

How waste is supplied.

"Now, suppose this wearing and waste to go on for several days, and not to be repaired, what would happen?"—"The man would become weaker and weaker, and at last die." "Right. But how is the waste caused by this wearing to be supplied?"—"By eating." "Do the bread and milk and cheese supply it?"—"Yes." "How?" One said, "They are converted into blood." A brief explanation of the processes of digestion, assimilation, and absorption of the nutritious elements of the food; of their conversion into blood; and of the deposit, by the blood, of bony matter to bones, flesh to muscles, nervous substance to nerves, &c., was given. The children listened to these elucidations with eager attention.

The Religious element introduced.

"When you ate your dinner at one o'clock, did you do so because you understood all these things, and saw that it was time to repair the waste?" A laugh—"No, sir, we were hungry." "Well, then, what made you hungry?" All answered, "It was the waste." "Let us attend, then, to the point at which we have arrived. Hunger, you say, is a call to you to eat, to repair waste: who made your body to waste away, to require food, and to feel hungry?"—"God." "Did He make you hungry, to lead you to eat when it was necessary to do so, although you knew nothing concerning the cause of your being hungry?"—"Yes." "Was this a kind provision for your welfare?"—"Yes, sir." "Let us inquire now whether anything more has been done by God, for your preservation and enjoyment."

"Where did the bread come from?"—"From the baker." "Did he make it?"—"Yes." "Out of what?"—"Flour and water." "Where did he get the flour?"—"From the miller." "Where did the miller procure it?"—"He bought wheat from the farmer, and made it into flour." "Where did the farmer get the wheat?"

How God supplies things.

—"It grew on his farm." "Do you mean that the farmer found it all ready-grown in his fields, whenever and in whatever quantity he wished to gather it?"—"No, he raised it." "What did he do to raise it?"—"He ploughed the land." "Anything more?"—"He harrowed it." "Anything farther?"—"He sowed seed." "Was nothing more necessary?" One clever boy, the son of a farmer, said,—"He put dung into the ground." "Right. Was anything more done?"—"In harvest, he cut the wheat and thrashed it." "Well said; but was this all that was needed?" A pause ensued; at last a boy answered, "Rain, sir." "Quite correct; but are you sure that nothing more was required?" A pause; then one said, "Heat, sir." "Well answered; but where did the heat come from?"—"From the sun, sir."

"You have told me that the farmer, in order to raise wheat, must plough, manure, harrow, and sow seed. Where did the land and first seed come from?"—"God provided them." "Right. Who furnishes the rain and the sunshine?"—"God." "Does God also plough, manure, harrow, and sow the land?"—"No, Sir, the farmer must do those things."

When God helps us.

"Let us again consider the point at which we have arrived. You say that God made your bodies liable to waste, that He made you feel hungry when it was necessary to eat, in order to repair the waste, and that bread and other articles of food are necessary to this end; and you have traced the history of bread through the baker, the miller, and the farmer, back to God, as the Giver of it. Here, then, we see that God has formed the body, and the ground, the wheat, the rain, and the sunshine, with reference the one to the other. Why has God provided the rain and the sunshine, the land and the seed, and not also done the ploughing and harrowing?" A long pause; and much reflection was expressed in the countenances of the children. It was necessary to help them, and I said,—"Every farmer needs land and seed and rain and sunshine; and these he cannot make, and therefore God provides these things for them all. Now, why does He not do the ploughing and other work also?"—"The farmer can do all these, and God leaves him to do them."

How work becomes religious.

"From what you tell me, then, I understand that, before you could enjoy the bread which you ate to your breakfast to-day, it was necessary that the bounty of God, and the labour of the farmer, of the miller, and of the baker, should be combined?"—"Yes, sir." "And that, in those arrangements, God does only what He has not enabled man to do for himself, and that He has assigned to man the rest of the work?"—"Yes, sir." "Well, then, when the farmer ploughs the land, is he doing something which God intended that he should do?"—"He is." "When you do what God requires you to do, are you doing the will of God?"—"Yes, sir." "When a farmer is ploughing all day, is he doing a necessary duty?"—"Yes, he is." "Is he to be respected or despised for working in this manner?"—"To be respected; he is doing what is right." "If he had in his mind all the steps which we have followed, would he feel that in ploughing he was doing a religious duty?"—"Yes." "Why so?"—"Because he would understand that God had appointed him to do it, that he and others might have bread, to enable them to live." "Right."

Skill more than strength required.

"But, to enable the farmer to raise wheat in the greatest quantity and of the best quality, is anything more necessary on his part?" A pause; then the answer, "Strength." "What gives him strength?"—"The food that he eats." "Right. Is anything more necessary?" A pause; at length a boy said, "Mind," and another said, "Knowledge." "Right again. He requires to know how to plough. But how does he acquire this knowledge?"—"Somebody who has learned to plough must show him the way." "Quite correct; and we call the combination of this acquired knowledge with strength, *skill*. Have all men equal strength?"—"No." "Are all men equally clever in learning to do what you teach them?"—"No." "Then, if you were farmers, and were going to hire two men to plough your land, and one were skilful and the other not, would you give them both the same wages?"—"No." "Why not?"—"Because the one would plough more and better than the other, and do more to raise wheat." "Right. But would this not be a hardship to the unskilful man?"—"He should acquire more skill." "But if he is naturally weak and dull?"—"This would be his misfortune; he should try some easier work." "Right again."

The value of morals in business.

"Suppose you were farmers, and could not plough all the fields with your own hands, but must hire men to plough for you, would you require anything more in your ploughmen than strength and knowledge?" A pause; no answer. "Has the ploughman the care of the horses?"—"Yes, Sir." "Is it his duty to feed and curry them, make a nice clean bed for them, and keep them dry and warm in the stable?"—"That is his duty." "Suppose, now, you had two ploughmen, one of whom was a kind-hearted, conscientious man, who was fond of his horses, and did all these things for their welfare punctually and with pleasure; and another who was ill-tempered, careless, and unconscientious, and looked on the care of his horses as a burden, which he shirked whenever his master's eye was off him. Which would you prefer?"—"The good man." "Certainly. But why would you prefer him?"—"Because his horses, being well fed and cared for, would work better." "Then you consider good nature and honesty necessary to make a good ploughman, as well as knowledge and strength?"—"Yes, sir."

The mutual dependence mankind on each other.

"Let us next suppose that there are two villages like Charlton, each with five hundred inhabitants, who need to be fed with bread, and that each of them depends entirely on three farmers for the wheat with which their bakers must make bread; but that the three farmers who supply one village are skilful, conscientious, active men, and keep only good ploughman and horses; and that the three farmers who supply the other village are careless, unskilful, and unconscientious persons, who do not look after the conduct of their ploughmen: Which would the lazy and unconscientious ploughmen of the neighbourhood seek out for their masters?"—"They would go to the careless farmers." "Which village, then, would be best supplied with wheat and bread?"—"The one that had good farmers." "It appears from this, that all the people who live in the villages depend, more or less, on the character and skill of the farmers and ploughmen in the neighbourhood for their supply of bread?"—"They do, sir." "But is it not hard that these persons in the villages who have no command over the farmers should suffer by their bad conduct?" A pause; no answer. "Let us inquire how this happens."

"Do the people of the villages do anything for the farmers in return for the wheat and bread?"—"Yes, sir, they make clothes and shoes for them; also carts and ploughs, and the baker bakes bread for them." "Right. Does the schoolmaster instruct their children, and the clergyman preach to them on Sundays?"—"They do." "Will it make any difference to the farmers, if the tradesmen, the schoolmaster, and clergyman, who do these things for them, are skilful and conscientious, or slothful, careless, and unconscientious?"—"It will make all the difference between being well served and ill served." "And suppose that the prices of the things furnished by these two sets of tradesmen, schoolmaster and clergyman, were equal, would the farmers prefer the articles made by the one set to those made by the other?"—Yes, sir; they would find the articles made by the good and skilful men the best." "Would they, on account of their superior quality, be really cheaper than the other,

The mutual dependence of mankind on each other.

although the price in money were the same?"—"Yes; they would serve the farmers better, and also wear longer." "Is it not a hardship on the farmers to depend for good articles on the skill and honesty of these villagers, over whom they have no control?" A pause; no answer. "Now, mark what I am going to say. Do the villagers depend on the sale of their articles to the farmers, for obtaining a share of their wheat to make bread?"—"Yes, sir." "And if they make bad articles, will the farmers buy them?"—"No, sir." "Will the villagers, in that case, have a supply of bread?"—"No." "Then you see that the farmers have a degree of control over the conduct of the villagers; for, if they do not make good articles, they withhold their bread. Let us again turn to the farmers. Which of the two classes of farmers, the skilful and honest, or the unskilful and careless, would produce the best wheat?"—"The skilful and honest." "Which could afford to sell their wheat cheapest, and yet, by their greater crops, have enough for themselves and for payment of their rents?"—"The good and skilful farmers." "Would the villagers prefer buying good wheat of them to inferior wheat from the other class, even if the price were the same?"—"They would." "Right. But from this it appears, that the farmers, in their turn, are dependent on the villagers for the sale of their wheat?"—"Yes, sir."

Love to our neighbour dependent on natural law.

"Now, who was it that made the farmers and the villagers, and, by the constitution of their bodies, made it necessary for them all to work, and each to do work to supply his neighbours with something that they need, in return for which he gets something that is wanted by himself—who, I ask, established this necessity for working, and this dependence of us all, the one on the other?"—"It was God." "Right. When you are told in the Bible, that it is your duty to love your neighbour as yourself, do you see, in this state of things, any arrangement to lead us to do so?"—"Yes, sir; if we should all do our duty in our own lines, we should all benefit ourselves and our neighbours at the same time; for each of us would have more things to sell and of a better quality, and he would get more articles in return." "Well answered."

"But let me ask again,—If God has established all this in the framework of our bodies and the endowment of our minds, is he a clever fellow who tries to find a shorter way than by skilful and honest labour, to a supply of bread, who, for example, cheats to get it, or steals it?"—"No, sir." "Can bread be produced by cheating and stealing?" A laugh. "No, it cannot." "Do the men who try to get bread by these means take it from some one who has produced it, or has obtained it by giving something valuable in exchange for it?"—"Yes." "Then is it the interest of all good, skilful, and honest people to stop these men from eating the bread which they do nothing to produce?"—"Yes." "If they combine their strength, have they the power to prevent them?"—"They have, sir." "If, then, by working skilfully and honestly each of us in our own line, and exchanging our articles, we are all better supplied, and if God has arranged things in this manner; what kind of conduct does He prescribe to us, and approve of?" A pause. "God means us to acquire skill, to be kind to each other, and to be honest." "Then, is there any hardship in our being dependent one on the other in this way?"—"No, sir." "Do you see in this dependence any sign that God meant us all to be happy together; in short, to love our neighbours as ourselves?"—"Yes, sir." "Well, then, let us bear these things in mind, and try to do them, in the full conviction that we shall never find shorter, easier, or better ways to our own happiness than those which God has appointed, and that, in all of these, we must walk side by side with our neighbours, to find the surest way to our own enjoyment."

The *natural* way to gain happiness.

I repeat that this was an improvised lesson, given to illustrate a method of instructing children which at once rouses their Intellects, excites their Moral faculties, and conveys knowledge of actual things and agencies which directly affect their well-being. It will be observed that, in illustrating the waste of the human body, I confined myself to that form of it which could be made intelligible to pupils who had not been instructed in Physiology. Where this subject has been taught to children, impressive lessons may be founded on it, embracing a wide field of practical duties, both personal and social. I learned this mode of teaching from my friend Mr William Ellis.[1]

The nature of this teaching.

4. LESSONS ON PHRENOLOGY.

The children of the Williams School, Edinburgh, then proceeded to the structure and functions of the brain and nervous system, or Phrenology. They mentioned the anatomy and functions of the spinal chord, the separate origins and uses of the nerves of motion and feeling, and the connection of these structures with the brain. They next answered on the functions of the brain, and pointed out

The Mental faculties taught

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[1] On Teaching Physiology, pp. 7–14. See Mr Ellis's "Socratic Method of Teaching" described, p. 237.

the situations of the organs of the Animal Propensities and the Moral and Intellectual faculties. An unmarked skull was then presented to them; and when Mr Combe touched one part of it after another at random, they named the cerebral organ which lay under that part, and never once failed to do so correctly. They also explained, in answer to miscellaneous questions, the uses and abuses of the faculties. To show the nature of this examination, in which Mr Combe and Mr Simpson took a part, as they had occasionally done in the other subjects, we select a few examples:—

Their functions illustrated.

"What organ lies here?" (pointing to a place on the skull)—"Combativeness." "What is the use of that faculty?"—"To give us courage to meet danger and difficulty in the discharge of our duty." "What are its abuses?"—"Fighting, opposing, contention." "If other boys assail you, should you fight?"—"No, we should tell you." "But suppose I am absent, what should you do?"—"Call the police for protection." "Yes; or any gentleman who may be there, if you cannot see a policemen." "Why are the police necessary?"—"Because there are people who steal and fight and destroy things." "What is the advantage of applying to the police rather than fighting?"—"Because we should all make a bad use of our Combativeness alike, and might be beaten, and no good would come to anybody from it." "What good comes from the police?"—"The peaceable are protected and the bad punished." This referred to the instruction which Mr Williams had given to the boys, to abstain from fighting with the pupils of a neighbouring school who had assailed them; because, when both parties were apprehended and carried to the police-office, the magistrate had told them that, as both had fought, he could only punish or dismiss both, the latter of which he did with a reprimand.

Religion part of man's nature.

"What organ lies here?"—"Veneration." "What are its uses?"—"To produce the emotion of respect, reverence, and religious feeling." "What are its abuses?"—"Idolatry, superstition, and respect for things and people that do not deserve it." "What other faculties enter into religious feeling?"—"Hope and Wonder." "Suppose any one were to tell you that religion was nonsense, and the invention of priests, to keep the people in order, what would you say to him?"—"That there are organs for Religion in the brain, that God made the organs, and that therefore God made man a religious being." "When the Greeks and Romans worshipped idols, were they religious?"—"Yes; but they were superstitious—it was a wrong religion." "How can we discover true religion?"—"By applying our Intellectual and Moral faculties to the study of God's will."

How happiness is best found.

"What organ is this?"—"Ideality." "What is the use of it?"—"It makes us love the beautiful and refined." "Do you know any objects that please Ideality?"—"Sir Walter Scott's Monument, Mr Stewart's Monument, the pillars on the Calton Hill, the front of the Commercial Bank, the Princes' Street Gardens, the view from Arthur's Seat." Each of these answers proceeded from a different boy, and was his own suggestion. "Are there any other faculties for enjoyment like Ideality?"—"Colouring and Wit, Time and Tune." "Do these show that God meant man to be merry at times and happy?"—"Yes." "What do some men drink whisky for?"—"To make themselves happy." "Do you know any other way of becoming happy?"—"Yes; to eat temperately of good food, keep the skin clean, breathe pure air, take exercise, follow some useful trade, and acquire knowledge." "Which of these two ways of becoming happy—the short-hand one of drinking whisky, or the one you have described, is the best?"—"The other is best." "What does whisky do to the stomach?"—"It inflames its coats." "What does it do to the brain?"—"Irritates and stupefies it." "What does the other method of being happy do?"—"It improves the stomach and brain." "How are people next day after drinking whisky?"—"Stupid, ill, and unfit for work." "How, after the other way?"—"Strong and well, fit for everything they need to do."

These are mere specimens of the course of the examination, which embraced several other faculties, with their uses and abuses. The answers of the boys elicited frequent bursts of laughter and applause from the audience.[1]

The mental organs

Mr Combe examined the children on Phrenology and its applications. They named, with great readiness and exactness, the bones, sutures, and leading processes of the skull, the divisions of the brain, and its relations to the spinal marrow. They stated the divisions of the mental organs, and, as Mr Combe pointed to a particular spot on an unmarked skull, they named the organ there situated, and stated its uses and abuses. They showed their comprehension of the modifying effects of different combinations of organs. "What is the consequence if Cautiousness be very large, and Combativeness be very small, in an individual?"—"He is too much afraid, and cannot contend with opposition." "If both organs be large, what happens?"—"The man is prudent and brave." Other similar illustrations were given, and it was clear that the children used Phrenology as an instrument of mental analysis.

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[1] From the first Report of the Williams School, pp. 14 and 17. The examination was held in July, 1849.

The causes of mortality.

Mr Combe quoted, from a published return of the mortality of Edinburgh, the statements that the mean age—

	Years.
Of the gentry at death was	43½,
Of the master tradesmen and clerks, . . .	36½,
Of the artizans, labourers, and servants, . .	27½;

and asked the children whether God favoured the rich and was unkind to the poor.—"No." "How, then, do the labouring classes live so few years?"—"Because many of them are dirty, wear dirty clothes, live in ill-aired houses, drink whisky, and are hard wrought." "How can this be remedied? How can we keep them clean, give them well-aired houses, &c.?"—"Educate them, and teach them to take care of themselves." One boy said, "Employ the scavengers." Roars of laughter followed this answer, and Mr Combe said, "How many scavengers will be needed to wash the skin of every dirty man, of every dirty woman, and of every dirty child, in Edinburgh? (Roars of laughter.) Who will pay them? Will you? (Loud laughter.) Will the dirty people allow the scavengers to wash them?"—"No, they will fight then." "Can anybody keep them clean but themselves?"—"Nobody can do so." "How does dirt make them die?"—"By stopping the pores of the skin and producing disease." "How does sleeping in bad air make them die?"—"By weakening their lungs." "How does drinking whisky cut short their days?"—"By damaging the stomach and brain." "Can any one, then, make these people live as long as the others?"—"Nobody but themselves."[1]

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[1] From the second Report of the Williams School, p. 25. The examination took place in May 1850.

PART FOURTH.

WHO SHOULD BE EDUCATED?

THE UNIVERSAL EDUCATION OF THE PEOPLE.

PART FOURTH.

CHAPTER I.

THE RIGHT OF THE LABOURING CLASSES, AS HUMAN BEINGS, TO BE EDUCATED.

The need of discussing the question of universal education.

T may appear superfluous in the present day to discuss the necessity or educating the people; but there are many well meaning, inluential, and by no means unintelligent persons, in both the higher nd middle ranks, who continue to express doubts of the expediency of such a measure.[1]

The question in hand is the education, not of the rich, nor of the middle classes, nor even of the well-to-do members of the labouring classes,—all of whom in this country contrive to educate their children according to their own views,—but the education of the lowest grade of our people; those who can do least, almost nothing for themselves. I beg that this distinction may be kept in view.[2]

The Labouring Classes: the objects of their lives.

The working-classes are God's creatures, and are as well entitled o justice as the higher ranks.[3]

Our opinions of the kind of education which the industrious lasses should receive, will depend on the objects which we assign their lives. If they have been created by Providence merely to oil and pay taxes, to eat, sleep, and transmit existence to future enerations, a limited education may suffice. But if they have been orn with the full faculties of moral, intellectual, and religious beings; if they are as capable, when instructed, of studying the works of God, of obeying His laws, of loving Him and admiring His institutions, as any class of the community; in short, if they are rational beings, capable of all the duties, and susceptible of all the enjoyments, which belong to the rational character: then no education is sufficient for them which leaves any portion of their highest powers waste and unproductive. This is the light in which I regard them; and the grand question is, What mode of life, and what kind of pursuits, are best adapted to the nature of man?

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[1] Article on "Secular Education," in *Westminster Review*, for July, 1852.

[2] In a letter to the *Economist* of 18th May, 1847.

[3] America, vol. iii. p. 375.

The elements of human nature.

In answering this question, we must keep in mind, that human nature consists of the following elements:—

1st, An organised body, requiring food, exercise, and rest, in due proportions;

2nd, Animal Propensities, requiring gratification;

3rd, Moral Sentiments, demanding exercise and enjoyment;[1]

4th, Intellectual faculties, calculated to acquire knowledge, and intended to direct the whole voluntary functions, bodily and mental, in the pursuit of their objects.

The lives of Labouring men too little rational.

In the present state of society, the industrious classes, or great mass of the people, live in the habitual infringement of several important laws of their nature. Life with too many of them is spent to so great an extent in labour, that their Moral and Intellectual powers are stinted of exercise and gratification; and hence their mental enjoyments are chiefly those afforded by the Animal Propensities: in other words, their existence is too little *rational;* they are organised machines more than moral, religious, and intellectual beings. The chief duty performed by their higher faculties is not to afford predominant sources of enjoyment, but to communicate so much intelligence and honesty as to enable them to execute their labours with fidelity and skill. I mean no disrespect to this most deserving portion of society: on the contrary, I represent their condition in what appears to me to be its true light, only with a view to excite them to amend it. I speak, of course, of the great body of the uneducated people: There are, among the labouring classes, many individuals who possess high attainments.

Does human nature, then, admit of the adoption of such habits and employments by these classes, as will tend to raise them to the condition of beings whose chief pleasures shall be derived from their rational natures—that is, creatures whose bodily powers and Animal

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[1] The term *Moral Sentiments*, when used in these lectures, always implies the Religious Feelings, which I regard as innate.—(G. C.)

Propensities shall be subservient to their Moral and Intellectual faculties, and who shall derive from the latter their leading enjoyments? To attain this end, it would not be necessary that they should *cease to labour;* on the contrary, the necessity of labour to the enjoyment of life is imprinted in strong characters on the structure of man. The osseous, muscular, and nervous systems of the body, all demand exercise as a condition of health; while the digestive and sanguiferous apparatus rapidly fall into disorder if due exertion be neglected. Exercise of the body is labour; and labour directed to a useful purpose is as beneficial to the corporeal organs, and far more pleasing to the mind, than when undertaken for no end but the preservation of health.

Labour is necessary, healthy, and good.

It should be moderate in amount and duration.

Commerce is rendered advantageous by the Creator; because different climates yield different productions. Agriculture, manufactures, and commerce, therefore, are adapted to man's nature, and I am not their enemy. But they are not the *ends* of human existence, even on earth. Labour is beneficial to the whole human economy, and it is a mere delusion to regard it as in itself an evil; but the great principle is, that it must be moderate both in quantity and duration, in order that men may enjoy, and not be oppressed by it. I say *enjoy* it; because moderate exertion is pleasure, and it has been only labour carried to *excess*, which has given rise to the common opinion, that *retirement* from active industry is the goal of happiness.

The effects of its excess.

It may be objected that a healthy and vigorous man is not oppressed by ten or twelve hours labour a-day; and I grant that, if he be well fed, his strength may not be so much exhausted by this exertion as to cause him pain. But this is regarding him merely as a working animal. My proposition is, that after ten or twelve hours of muscular exertion a-day, continued for six days in the week, the labourer is not in a fit condition for that active exercise of his Religious, Moral, and Intellectual faculties which becomes him as a rational being. The activity of these powers depends on the condition of the brain and nervous system; and these organs are exhausted and deadened by too much muscular exertion. The fox-hunter and ploughman fall asleep when they sit and attempt to read or think. The truth of this proposition is demonstrable on physiological principles, and is supported by general experience; nevertheless, the teachers of mankind have too often neglected it.

The first change, therefore, which is to be desired is, to limit the hours of labour, and to dedicate a portion of time daily to the exer-

Time should be devoted to the mental faculties.

cise of the mental faculties. The same means will lead to the realisation of practical Christianity. An individual whose active existence is engrossed by mere bodily labour, or by the pursuits of gain or ambition, lives under the predominance of faculties that do not produce the perfect Christian character. The true practical Christian possesses a vigorous and enlightened Intellect, and Moral Affections glowing with gratitude to God and love to man; but how can the people at large be enabled to realise this condition of mind, if stimulus for the Intellect and the nobler Sentiments be excluded by the daily routine of their occupations?

The uneducated and untrained labourer is not only ignorant, but his mental organs, through want of exercise, are dull, feeble, and incapable of thinking continuously, or acting perseveringly. We may give him instruction, but it does not penetrate into his inactive brain, and it is not reproductive of thought and action.

How the Middle classes obtain the social prizes.

The middle classes have long since arrived at the conviction, that this country presents to them a theatre for exertion, in which, as a general rule, the prizes of wealth and social consideration fall to the share of those individuals who display the greatest amount of activity, directed by intelligence and morality, to useful or pleasing objects. The extraordinary efforts which they make to train up their children in habits of activity and perseverance, show how deeply they are penetrated by this truth. Their children are sent to school at five or six years of age, and from that age to fifteen or sixteen, in some cases till eighteen or twenty, they are subjected to mental exercises during six or eight hours a-day. It is not so much the knowledge, as the habits of mental activity and perseverance acquired by this discipline, that enables those children, in after life, to appropriate the prizes to themselves. They do not *rob* the working classes of them, as some persons maintain; because, by the order of Providence, the prizes could not exist unless there were intelligence, powers of combination, capital acquired by industry and accumulated by prudence and economy, to produce them; and it is the superior mental training of the middle classes which enables them to realise these conditions of wealth.

How the Lower classes lose them.

The children of the working classes, in localities where they are not protected by the factory law, or trained by parents who are themselves educated, are too generally sent to labour at the age of eight or nine years, and afterwards their mental faculties receive little or no cultivation.[1] The consequence is, that they are not only ignorant, but, in adult age, they become dull and incapable of intellectual application and moral perseverance. The necessity which poverty imposes on the labouring classes, of taking their children too early from school and employing them on labour, appears to me to be the greatest of all the existing obstacles to the elevation of those classes in the social scale.

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[1] This evil has been remedied, to a large extent, since the passing of the

They can be gained only through efficient education.

If this opinion be well founded, the best remedy the evil admits of, in the present condition of society, appears to be to improve and multiply schools, and to lower the fees of them; so that not only none of the children of the poor may be excluded from them, but that the teaching and training may be so efficient as to render the few years of leisure which are at the command of the children of this class, as productive of good habits and intellectual intelligence as possible.[1]

The desire of knowledge is general, but weak in some.

Men in general have appetites sufficiently strong to impel them, without external excitement, to seek supplies for the wants of their animal nature. Hunger and thirst press so keenly on their feelings, that the most thoughtless of mankind are prompted, by their importunity, to exert themselves to procure food. The piercing winds and the winter's frost force them to provide raiment. But it is argued by some writers on religious and scientific education that the case is quite different with our Moral and Intellectual nature. The human being, deeply buried in ignorance, has no painful consciousness of his condition; he is stimulated by no self-acting desires to feed and clothe his mind; he will remain for ever mentally destitute and naked, the passive victim of his animal feelings, unless excited by the importunity of more enlightened men to cast aside his sloth.

This desire not yet fairly tested.

While this representation contains some truth, it does not appear to me to be entirely correct. The appetite of the mass of the people for instruction has never been fairly tried. By their external circumstances they have been trained to fight, to labour, and to indulge in dissipation; but rarely to seek enjoyment in the cultivation of their Moral and Intellectual powers. It would be as reasonable to state, as an objection against human nature, that an individual trained as a divine, has little relish for agriculture or for law, as to urge as a plea against it, that labourers and artizans, whose mental powers

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English Education Act of 1870, and the Scotch Act of 1872. The Supplementary Scotch Act of 1878 is framed, amongst other objects, to meet this abuse of childhood.

[1] Popular Education, pp. 24–27.

have never been cultivated, but, on the contrary, have been blunted by their occupations, have no taste for literature or science.

Poor food has been supplied to it.

Besides, the great body of the people have never had wholesome mental food presented to them, and their defect of appetite is prematurely assumed. If the foregoing views of the constitution of the mind and its adaptations be correct, the objects best calculated to rouse the Intellect, and delight the Moral Sentiments, are those presented by nature in her various departments; and knowledge of this kind has never been offered to the people and rejected. Drowsy and incapable teachers have too often administered husks and rubbish to the youthful mind; and, because it has revolted at this dose, it has been charged with a distaste for all useful information. If the minds of practical men *could* have taken a deep and abiding interest in Greek, Latin, scholastic Logic, and Metaphysics, I should have despaired of the progress of the race; and yet, until almost the present day, the learned had little else to offer to their notice. That they have turned with distaste from these studies is no better proof that they will dislike all knowledge, than the rejection of wormwood by a child is evidence that it will not relish sugar. Before the appetite of the people for knowledge can be fairly estimated, they must be placed in external circumstances calculated to favour the activity of their Moral and Intellectual powers; *knowledge really related to their faculties* must be presented to them; and their teachers must be men qualified by nature and acquirements to communicate useful information and command respect.

A knowledge of man and his surroundings has not been taught.

The principles on which God administers the Physical, Organic, and Moral Government of the world, are to be discovered by studying the constitution, modes of action, and laws of the instruments, or of the things and beings, by means of which that government is conducted:[1] but this proposition is not generally recognised as true; yet, until it shall be admitted, the paramount importance of studying and acting in harmony with the laws of nature cannot be comprehended. This view of Providence is not understood, because the people have rarely been taught the philosophy of their own nature, physical and mental, and its relations to the external world. Hence, if there be any course of study or of action, written, as it were, in the constitution of man, and recommended by the Creator to our attention, too little of that lesson has yet been read to the people. Teachers themselves were ignorant of it. The mental organs being a portion of the means by which the Moral Government of the world is conducted, must be studied and understood before the principles of that government can be comprehended; nevertheless, this study is, by many persons, opposed, denounced, or neglected, as if God had neither framed the organs nor established their relations.

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[1] This idea is worked out, p. 123, *et seq.*

The prevalent indifference to education is caused by its imperfection;

Unless there be prompters to enforce attendance, or unless the appetite already exists to induce the people spontaneously to repair to the portals of the church, or to the halls of the schools and the university, the richest viands for the mind may be spread there, and no guests be found to enjoy their delicious savours. Accordingly, we perceive, that, after the London University College has been reared, and other arrangements for education have been completed, the students are few, and the good accomplished is limited. The citizens, educated in words alone, are unbelievers in the existence of practical knowledge, and proceed in their wonted rounds of labour and money-getting, unconscious of the value of science, and without a motive to engage in its study.[1] Some provincial institutions for the scientific instruction of the industrious classes, have shared a similar fate. They have perhaps been frequented for a short time, while novelty and influential names produced excitement; but have too soon been deserted by those for whose benefit they were reared. For these unfavourable results, I blame the stinted education given to the existing generation in their primary schools. This left them sceptics concerning even the existence of useful knowledge, and defrauded them of all taste for its advantages and sweets.

And by the low estimate of Natural Science.

Indifference to instruction has been fostered also, by the low estimate too generally formed by religious teachers of the practical value of Natural Science; and the blindness of many persons to the fact that science is information concerning the great laws by means of which God governs the world. It is true, then, that, in the present state of society, there is a vast body of men, who, from their circumstances and training, feel no spontaneous impulses towards improving their Moral and Intellectual nature, and who, if provided with food, clothing, shelter, and amusement, desire little else.

But there are also among the people many gifted spirits, whose native energies have enabled them to surmount all the obstacles

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[1] The London University College has of late years had a success that would have gratified George Combe. The above was written in 1848. University College had only been separated from the University of London in 1836. See Kiddle and Schem's "Cyclopædia of Education," *s.v.* University College.

The educated Labourer is happy and successful.

presented by imperfect education to the expansion of their minds, whose Moral and Intellectual faculties long for knowledge, for refinement, and for improvement in virtue, as keenly as their bodily appetites burn for their proper gratifications. These individuals have struggled hard for food for the mind; and they have generally obtained it. They not only desire to advance themselves, but they feel a call within them to become apostles or missionaries to excite their less vivacious and intellectual brethren to improvement. This appears to me to be the class instituted by Providence for successfully inviting the unwilling guests to the banquet of knowledge.

These should be consulted in regard to education.

Too many of the educational institutions which have hitherto been formed, have omitted to invoke the co-operation of these important auxiliaries. Bankers, merchants, and landed gentlemen, whose consequence and influence originated in, and depended chiefly on, wealth, have been the founders and directors of most of the existing establishments; and by rank, habits, feelings, and inclinations, they were far removed from the class of slumbering minds who stood in need of being awakened.[1]

Man is improvable by education;

It has sometimes appeared to me that divines, with the best intentions, have obstructed the progress of human improvement by colouring too highly the representations of man's depravity and weakness, and urging in too strong terms his natural incapacity for any good. These views repress exertion, and foster indolence and ignorance. Dr Chalmers entertained more favourable opinions of our nature, and I rejoice in calling your attention to the eloquence, as well as the truth, of the following remarks. "We might not know the reason," says he, in his Bridgewater Treatise, "why, in the moral world, so many ages of darkness and depravity should have been permitted to pass by, any more than we know the reason why, in the natural world, the trees of a natural forest, instead of starting all at once into the full efflorescence and stateliness of their manhood, have to make their slow and laborious advancement to maturity, cradled in storms, and alternately drooping or expanding with the vicissitudes of the seasons. But though unable to scan all the cycles either of the moral or natural economy, yet we may recognise such influences at work, as, when multiplied and developed to the uttermost, are abundantly capable of regenerating the world.

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[1] Popular Education, pp. 62–66.

One of the likeliest of these influences is the power of education, to the perfecting of which so many minds are earnestly directed at this moment, and for the general acceptance of which in society, we have a guarantee in the strongest affections and fondest wishes of the fathers and mothers of families."[1]

And by the natural tendencies of his faculties.

Add to these reasons for hoping well of our nature, the discovery that the *capacity* for civilisation may be increased by exercising the Moral and Intellectual faculties, in conformity with the laws of organisation; a fact from which the happiest results may be anticipated in regard to human improvement. History represents man as having been hitherto a passionate, pugnacious, grasping, and ambitious, rather than a moral and rational, being; and even now we do not feel entirely secure against a recurrence of rapine and war. Yet fighting and plundering are calculated to gratify only a few of the human faculties, and these the lowest in the scale; while they outrage the higher and better feelings. In proportion as the knowledge of our true good, and of the real relations of our nature to our fellow-men and the external world shall increase, it will be seen that prosperity and enjoyment spring only from industry and virtue; and we may hope that the appetite for war will diminish.

Are any men incapable of more than mere labour?

The objection has been stated, that, even in the most improved condition of the great body of the people, there will still be a considerable proportion of them so deficient in talent, so incapable of improvement, and so ignorant, that their labour will be worth little; that, as they must obtain subsistence, no alternative will be left to them but to compensate, by protracted hours of exertion, for their deficiencies in skill; and that their labour, furnished at a cheap rate, will affect all other classes of society, and prevent the anticipations now stated from ever being realised. This objection resolves itself into the proposition, That the people have been destined by the Creator to be mere labouring animals, and that, from their inherent mental defects, they are incapable generally of being raised to any more honourable station; which is just the great point at issue between the old and the new philosophy.

If mankind at large (for the industrious classes constitute so very great a majority of the race, that I may be allowed to speak of them as the whole) had been intended to continue for ever mere hewers of wood and drawers of water, it is probable that Moral and Intellectual faculties would not have been bestowed on them; and as even the humblest individuals enjoy the rudiments of all the feelings

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[1] Dr Chalmers' "Bridgewater Treatise," vol. i. p. 186.

Their possession of higher faculties proves higher capacities.

and capacities which adorn the highest, and as these faculties themselves are capable of improvement, I do not subscribe to the doctrine of the permanent incapacity of the race. I consider them quite capable of becoming qualified, in successive generations, to perform the duties and to reap the enjoyments of rational beings: and whenever the great majority of them shall have received a thoroughly good education, and a proper moral training, and have thereby acquired a sense of the true dignity of their nature, and a relish for the enjoyments afforded by their higher faculties; they will be found capable of regulating the supply of labour in reference to the demand, in such a manner as to obtain the means of subsistence, in return for moderate exertion. I regard it as probable, that then few of the imbeciles alluded to in the objection will exist; and that these few will be kept in the right path by the influence of enlightened opinion, which will then pervade the social circle.

But universal improvement only possible with centuries.

At the same time, in reference to the present and several succeeding generations, there is great force in the objection now stated. In throwing out the views contained here, I embrace centuries of time. I see the slow progress of the human race in the past, and do not anticipate miracles in the future. If a sound principle, however, be developed—one having its roots in nature—there is a certainty that it will wax strong and bear fruit in due season; but that season, from the character of the plant, must be a distant one. All who aim at benefiting mankind, ought to keep this truth constantly in view. Almost every scheme is judged of by its effects on the living generation: whereas, no great fountain of happiness ever flowed clear at first, or yielded its full stream to the generation who discovered it. Even enlightened men do not yet understand the principles on which the Order of God's Secular Providence is conducted, nor do they practically believe in a real and efficient government of the world by Divine laws.[1] In consequence, mankind do not yet enjoy the moral benefits of Christianity. Practical Christianity is only developing its power, and hundreds of years may elapse before its blessed spirit shall fully pervade all the transactions of human life. I do not expect to see the principles advocated here generally reduced to practice in this age; but, if they be founded in nature, they will in time vindicate their own might.[2]

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[1] See these ideas worked out, p. 123, *et seq.*

[2] Popular Education, pp. 46–48.

CHAPTER II.

THE PERSONAL ADVANTAGES OF EDUCATION TO THE LABOURING CLASSES.

George Combe's early association with the lower classes.

MR COMBE mentioned the circumstances which had led him to take a particular interest in the welfare of the working classes. Born in a manufacturing suburb of Edinburgh, lying between the Grassmarket and the West Church, there were no middle-class houses within a considerable distance of his father's brewery, while all around it were the houses of working men. His earliest companions, therefore, were the children of this class. His first initiation into social life was under their roofs. He found among them many excellent dispositions, comfortable homes, and individuals possessed of intelligence and respectable attainments. There were, indeed, some who were vicious and miserably poor, whose lives were passed in alternate debauchery and starvation; but they were the minority. In his sixth year, he was sent to school, and envied the lot of the workmen's children, many of whom were left free to roam in the fields, play at marbles, and slide upon the ice. In a few years, however, he saw these young light-hearted beings, all untrained and uneducated, taken from their sports, sent to trades, and subjected in manufactories to ten labour hours a-day. He continued for years to toil in schools and fag at lessons, while they laboured in their workshops; and, during this period, it was hard to say which was the most severely tasked, the boys of the middle classes in their schools, or the children of the workmen in their shops.

The middle classes rise by education.

But the next ten years, after the end of the schooling and of the workmen's indentures, made a great difference in the destinies of the two sets of children. The toil of the brain had fitted the one class to discharge the higher and more difficult duties of social life, given them self-restraint, and that commanding capacity which enabled them to wield and apply capital as a source of wealth. They reaped the prizes of the world. They did not rob the lower classes of them; because it was their own educated ability, steadiness, morality, and economy, which enabled them to pay for and to combine the uneducated labour of the working men in producing wealth which that uneducated labour, if left to its own resources, never could have called into existence.

The lower are stationary from its want.

He saw that the working men, as a class, remained stationary. Their career in life was determined by their early condition. Some enlisted into the army and navy, and were killed off in the war which then raged;[1] some, while yet young, fell victims to disease induced by irregular habits, dirt, bad air, and other avoidable evils; while those who lived longer still perished comparatively early, worn out by hard labour and imperfect nutrition. Among all the children of the working classes who were the companions of his childhood, Mr Combe knew of none surviving; but he knew the grandchildren of some of them: while of his school associates many remained alive, several filling highly honourable stations in society.[2]

But they rise according to their cultivation.

There were exceptions, however, to these cases among the working men. Those individuals among them who had natural talents, and had received some degree of moral and intellectual cultivation, took the higher stations in their own rank, became skilled operatives and foremen, earned good wages, lived comfortably, and were highly respected. Some few rose to be master tradesmen; but hard toil, occasional reckless indulgence, and poverty, were the lot of too great a number. The returns of mortality for the city of Edinburgh bore out these facts. They showed that, among the labouring classes, the average of life is only 27½ years; among master tradesmen and shopkeepers, 36½ years; among landed proprietors and professional men, 43½ years.[3]

Real education the best agency for raising them:

What caused these great differences? Mr Combe was convinced that education was more influential than all other agencies and circumstances combined, in giving wealth, enjoyment, and long life to the great majority of the one, and toil and poverty and early death to the mass of the other class; and, from the day when he arrived at this conviction, he had never ceased to desire a higher education for the people, for whom he continued to feel all the sympathy, attachment, and respect generated by his early observation of their natural good qualities, and of the hardships to which many of them were exposed.[1]

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[1] The war against Napoleon, the effects of which are described in his Autobiography, in his "Life," by Charles Gibbon, p. 29.

[2] George Combe's early life, and his intercourse with the working classes, are graphically described in his Autobiography, in his "Life," by Charles Gibbon, chaps. i. and ii. When George Combe spoke the above, in 1851, he was 63 years of age.

[3] This was spoken in 1851. The same returns are referred to pp. 140 and 488.

It would increase their skill as workmen;

You, the working classes, are the chief objects of the educational movement.[2] The upper and middle classes are both able and willing to educate their children themselves; but, for want of money, time, and knowledge, you are, in this respect, in a less favourable condition. This country has arrived at that stage of civilisation in which mind has acquired an enormous superiority over mere strength. The steam-engine has been made to supply the place of millions of human muscles as operating forces; and, while these muscles continue incapable of higher modes of action than those which belong to the steam-engine, the horse, and the water-wheel, their owners can expect no higher remuneration for their toil than that which will remunerate the masters of such inanimate and unintelligent powers for the capital expended on them. The human labourer must learn to do something which these cannot accomplish; he must acquire skill to form more intricate combinations, and taste to produce finer results than they: and then his labour will be worthy of, and will obtain, a higher remuneration. The labourer will then, in intelligence and skill, be the fellow of the capitalist and employer, and will share his profits and command his respect. This high advantage can be obtained only by careful training and instruction in childhood and youth.

And make them intelligent citizens.

I repeat, then, that the enlightened advocates of National Education desire to raise your children to the rank of skilled operatives, and moral and intelligent members of the community. You are the persons chiefly interested in the movement, and yet, so far as I know, you have been least of all consulted on the subject. Men of different religious denominations, who are sincerely desirous to elevate your condition, have endeavoured to devise a scheme of National Education, in which the rights of all shall be respected; but hitherto the accomplishment of the good work has been hindered by the circumstance, that each religious sect desires to have such control, direct or indirect, of the educational machinery, that the schools may serve, not merely to impart Secular knowledge, but also to recruit the ranks of the sect, and to fill the pews of its churches or meeting-houses. In regard to this, too, they have omitted to consult the labouring classes, whose children chiefly the schools are intended to educate.[1]

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[1] Speech at Glasgow in 1851, on National Education; from *North British Daily Mail.*

[2] This refers to the great agitation in favour of National Secular Education carried on in 1851, in support of Lord Melgund's Education Bill for Scotland, introduced into Parliament in June that year; in which agitation George Combe was one of the chief movers. See Introduction, and pp. 223 and 237 of the present work; and his "Life," by Charles Gibbon, vol. ii. p. 289.

The prizes of intelligence are gained only by the educated.

Parents who neglect the education of their children, really renounce, for their offspring, all right to the prizes offered by Providence to intelligence, industry, and morality, and rivet the chains of dependence about their necks for ever. Wealth cannot be produced by ignorance and inertness; and, without a moderate command of property, independence and social consideration cannot be attained. The labouring classes, therefore, in my opinion, have no alternative but to qualify themselves, by training and education, to fulfil the conditions on which Providence has made wealth and social well-being to depend, or to submit to poverty and dependence.

This proved by the experience of working men.

There is a large number of working men, particularly in the departments of skilled labour, who are intelligent and moral, and who, when married to prudent and active women, live in comfort, and bring up their children with much respectability. This class will be able to trace their own advantageous position to good natural endowments, strengthened and rendered practical by education, example, or other influences, tending to give the ascendency to their Moral and Intellectual faculties. If, therefore, they desire, not only to transmit their own condition to their children, but to promote their elevation in the social scale, they will prize well-constituted schools as the best of all means for accomplishing these ends.[2]

Education necessary for the exercise of the faculties.

I have stated, with some minuteness, that a neglect of education leaves the individual not only ignorant, but *incapable*.[3] You,[4] I perceive, dislike Phrenology; but you will, I hope, excuse me for referring to it, because, by no other means, can I render what appears to me to be an important truth so clear as by the application of its principles. The mind in this life acts through the instrumentality of the brain, and the brain is subject to all the ordinary laws of Physiology. An unexercised limb is feeble, and incapable of sustained and vigorous action. Education is to the brain what exercise is to the limbs; and the uneducated man is not only ignorant, but, owing to the unexercised condition of his brain, his Moral and Intellectual faculties are blunt, dull, and incapable of sustaining activity. This dulness is to me inexplicable, if the mind is not influenced by the state of its organs.

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[1] Speech at Edinburgh in 1851, on National Education; from *Scotsman*.

[2] Popular Education, p. 27.

[3] See pp. 494–5.

[4] The Editor of the *Economist*, in an article in that journal, of 15th May, 1847.

Its want makes them dull and inert.

In these remarks, I refer to average men, for there are individuals, in every community, who have derived from nature an inherent energy, which enables them to educate themselves; and they are not here the subjects of consideration. It is the inertness, the dulness, the want of the power of pursuing a distant good, at the expense of a temporary act of self-denial, that *keeps* the lowest portion of our people in their present condition, surrounded, as they are, by the lights of a free press, and of a high general civilisation. Their external circumstances *educate* their Animal Propensities, and give activity and vigour to the portions of the brain with which they are connected; while, through want of exercise, the Moral and Intellectual regions are not only vacant but benumbed.

This is proved in Germany:

I beg to apply these observations to Germany. I have lived nearly two years in Germany, and had some experience of the condition and qualities of its people. I have visited Prussia, Saxony, Bavaria, Baden, Bohemia, and Austria; and had opportunities not only of conversing with the enlightened men and women of these countries, but of living in close contact with portions of their common people. I have employed a few of them as domestic servants, and many of them as temporary guides, coachmen, tradesmen, &c.[1] In some portions of Germany—Hesse-Homburg, for example,—the Austrian dominions, and in Bohemia, the common people have enjoyed the benefit of schools placed under clerical guidance, and the general influence of European civilisation, which you mention as important instruments of education. But, in Prussia, Saxony, and South-western Germany generally, in addition to these, a vigorous *Secular* education has been applied to all classes by Government aid. The difference of the results, in my judgment, is so great as to warrant the description I have given.

In the former countries, the common people, generally, are not

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[1] George Combe travelled much on the Continent, especially during the latter part of his life, for the purposes of health, inquiry, and the spread of his opinions. See his "Life," by Charles Gibbon.

Stupidity and incapacity are according to the neglect of education.

only ignorant, but distressingly stupid, and, in the adult state, nearly incapable of instruction. I state this from observations made to me by philanthropic and enlightened patriots in these countries, who laboured, with a zealous and judicious earnestness, to improve the people on their own estates and in their own localities. Their constant lament was—"Our people are so stupid, they are so silly, that they do not act out the instructions we give them, or apply judiciously and perseveringly the means of improvement we place in their hands." I have heard the same remark made by Dorsetshire[1] philanthropists, who have asked me, "Why is it that our common people are not only ignorant, but so dull as to seem incapable of profiting by what we desire to do for them?" Irish and Scotch Highland proprietors have again and again put the same question to me—"How is it that, although we point out to these people what they should do to improve their condition, and tender them assistance to do so, there is a constant tendency in them to relax in their efforts and to relapse into their old habits, whenever we cease to apply the spur?"

Only one answer can be given by me:—The untrained and unexercised brain obstructs the play of the mental powers; it is feeble, and soon becomes fatigued; it wants spontaneous activity: and hence, when you cease to excite it by external appliances, it sinks into inaction, and the mind takes no interest in future good to be purchased by a present painful effort.

Activity and capacity rise with education.

As a contrast to this condition of the uneducated masses in Austria, Bohemia, and the neglected portions of Germany, among whom (as well as among the uneducated in many parts of England, Ireland, and Scotland), the *inertness* of the seventeenth century still prevails; I beg to state, that in the countries where the Prussian system of education has been in force for twenty or thirty years, there is palpably a greater mental activity, and greater capability of improvement, in the lower classes of people. They not only *know* more, but are more *capable of learning*. The exercise of their brain, from infancy, in mental action, has made thinking comparatively easy. By the increased vigour which it has imparted, it has rendered persevering effort in pursuit of moral ends more easy and agreeable, and the individual more capable of spontaneous reflection, as well as more alive to the influence of Moral and Religious emotions. In short, the *uneducated* German is, to this day, like the Scottish Highlander, the Irish peasant, and the Dorsetshire labourer, not only ignorant, but feeble-minded; while the German who has gone through the training and instruction of the Prussian schools, approaches much more nearly to the condition of our educated, intelligent, and energetic operatives in Manchester and Birmingham.[1] The great recommendation of the Prussian system is, that it embraces the lowest members of the social mass; and when I compare the present condition of that class in Prussia, with what their state was before they were educated, and that in which their untrained compeers still continue in Germany, the figure, that "education has put a soul beneath the ribs of death," really does not appear to be exaggerated. The evil in England is, that our educational agencies do not effectually reach that class.[2]

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[1] Mr Bastard, George Combe's friend, lived at Charlton-Marshall, near Blandford, Dorset, whom he often visited. See p. 247; and Combe's "Life," Index.

The certainty of the results of early training.

If parents have transmitted to their children well balanced and favourably developed brains, and discharged their duty in training, educating, and fitting them out in the world, they will rarely have cause to complain of ingratitude, or want of filial piety. Where the brains of the children are ill-constituted, or where training and education have been neglected or improperly conducted, the parents, in reaping sorrow and disappointment from the behaviour of their offspring, are only suffering the natural consequences of their own actions; and if these are punishments, they should read in them an intimation of the Divine displeasure of their conduct. In proportion to the development and cultivation of the Moral and Intellectual faculties, are gratitude and filial piety strongly and steadily manifested by children. By the well-principled and respectable members of the middle and lower ranks, parents are scarcely ever left in destitution by their children, if they are at all capable of maintaining them; but, among the heartless, reckless, and grossly ignorant, this is not uncommon. The legal provision established for the poor, has tended to blunt the feelings of many individuals in regard to this duty; yet great and beautiful examples of its fulfilment are frequent, and we may expect that the number of these will increase as education and improvement advance.[3]

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[1] George Combe had *personal* knowledge of all the countries referred to. See his "Life" by Charles Gibbon.

[2] From a letter to the *Economist* of 18th May, 1847, in reply to an article there, of 15th May; given also in Horace Mann's "Educational Tour," edited by Dr Hodgson, 4th Edit. p. 214 (London, Simpkin, Marshall & Co.)

[3] Moral Philosophy, Lecture VII.

CHAPTER III.

THE SOCIAL ADVANTAGES OF UNIVERSAL POPULAR EDUCATION.

The wide differences between the upper and lower classes caused by education.

THE necessity for educating the working men is dictated by the very reasons which objectors urge as arguments against it. In the savage and barbarian states of society, the humblest member of the tribe is not, in point of acquired information, intellectual power, and refinement of taste, nearly so far below his chief and the magnates of the land, as is the peasant or labourer, who can neither read nor write, beneath our educated upper and middle ranks. The high instruction of the minority, and the unabated, savage-like ignorance of the majority, of our population, have silently effected the greatest social revolution that the world has ever witnessed. Education has given a scope of knowledge and an intellectual capacity to the former, which have placed in their hands the resources of nature, wealth, refinement, and political power, to an extent unparalleled in the history of nations; while scarcely one step in advance in all these advantages has been made by that portion of the people which continues altogether uninstructed. The consequence is that, in helplessness, ignorance, intellectual incapacity, improvidence, vices, and coarseness of feeling, the latter exhibit many characteristics of the Red Indian, without his self-respect, power of endurance, and circumspection. The atmosphere of civilisation has dimmed their manhood, while it has left many of the worst features of the savage or barbarian state unchanged. Need we wonder, then, that those mental qualities ripen into pauperism, and overflow the land as with a wasting flood?

The state of the lower classes punishes the community.

This degradation punishes, with scorpions' stings, the upper and middle classes, through whose blindness and apathy it has occurred. If they have human sympathies, they are galled, particularly in seasons of scarcity, by the spectacle of wan-faced, sickly, starving men; emaciated, half-naked, dirty, and debased women; ragged, shivering, and famished children, whose numbers are so overwhelming that they plunge the kind-hearted into despair. Again, they are visited by tax-collectors, claiming their substance for the support of criminal officers, gaols, houses of correction, ships for transportation and pauper workhouses, to an extent that often seriously impairs their power of educating and providing for their own offspring and dependents; and this solely to restrain and maintain this abject portion of our people. They are exposed also to the overflowing of infectious diseases, which ever and anon break out in the dens of filth and misery where those unfortunate creatures reside; and which, occasionally reaching the higher ranks, sweep away, indiscriminately, youth and age among them, as if by an avenging scourge. Finally, they live in a habitual sense of danger from the overwhelming physical power, unguided by knowledge, and unrestrained by moral and religious principle, which is known to reside in the masses. They fear that, if pressed upon beyond endurance, it may, at any moment, burst forth like a volcano, and deluge the country with blood. These are some of the reasons which dictate the necessity for educating the people; and they appear to us so cogent, that our suprise is great that they have not sooner produced energetic action.[1]

The want of education endangers social order;

The British Legislature has refused adequate grants for the education of the people. Considering that the national debt was incurred exclusively under the administration of the aristocracy, and that its existence is the cause of much of our heavy taxation, it would be an equitable arrangement to apply the £8,400,000 raised annually from tobacco, snuff, and home-made spirits[2] (the luxuries, and, in my opinion, the injurious luxuries of the labouring classes) to the education of the people, and to raise a corresponding sum by imposing inventory duties, legacy duties, and direct taxes on real estate. As the law now stands, the unrepresented masses are able to influence the classes who make the laws only in two ways, either by outrages against social order and property, which are speedily repressed and punished, or by becoming burdens on them as paupers. I am far from believing that legislation can remove all the evils with which the lower classes in Great Britain and Ireland are afflicted, and much farther from recommending universal suffrage as the remedy even for those which legislation may reach. I have elsewhere said[3] that "no rational person will maintain that one ignorant man is a proper ruler for a great nation, but additions to numbers do not alter the species. Twenty, or a hundred, or a thousand ignorant men, are not wiser than one of them ; while they are much more dangerous. They inflame each other's passions, keep each other's follies in countenance, and add to each other's strength."[1]

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[1] Article on Secular Education in the *Westminster Review* for July, 1852, p. 3.

[2] The above was written in 1841. The duty for home-made spirits alone for the year ending March, 1876, was upwards of £15,100,000.

[3] In Moral Philosophy, chap. vii.

And leaves the masses without rational regulation.

In consequence of profound ignorance, man, in all ages, has been directed in his pursuits chiefly by the impulses of his strongest Propensities—at one time to war and conquest, at another to animal pleasure, and at a third to accumulating wealth,—without having framed his habits and institutions in conformity with correct and enlightened views of his own nature, and its real interests and wants. Down to the present day, the mass of the people, unfavourably situated for the development of their rational nature, have remained essentially ignorant, and liable to become the tools of interested leaders, or the victims of their own blind impulses. They constitute the great majority of the nation, and, of necessity, their condition influences that of the rest. But the arts and sciences are now tending towards abridging human labour, and promise to furnish leisure to the people; the elements of useful knowledge are rapidly increasing; the capacity of the operatives for instruction is generally recognised, and the means of communicating it are becoming more abundant: so that a new era may fairly be considered as having commenced.[2]

Inventions and improvements only from the educated.

You[3] say, "Will Mr Combe show us, within the last thirty years, one social improvement imported into England from Prussia, for ten imported into Prussia from England? To the uneducated people, the educated people have been indebted for steam-navigation and railroads, cotton-mills and newspapers, &c."

Answer.—England has always had a highly educated class, whose early training and instruction enabled them to profit by her free institutions; and it is they, and not her uneducated masses, who have achieved these great inventions and improvements. It is from them, therefore, that the Germans have borrowed. I ask, Can you show great improvements emanating from the uneducated agricultural labourers of England, which have been adopted by the educated labourers of Germany? This is the true form in which the question should be put.[1]

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[1] America, vol. iii. p. 371 ; written in 1841, before the Minutes of the Committee of Privy Council on Education of 1846. [2] Popular Education, p. 46.

[3] The Editor of the *Economist*, in article of 15th May, 1847.

Education will increase rational enjoyments.

But there is one effect of the study of science which I am prepared to admit. When the mind has been opened up to the designs of Providence, as displayed in creation, and has learned to draw its best enjoyments from contemplating their excellence and grandeur, and taking a part in their execution; there will be a distaste for excessive and exclusive money-getting, and for the present long and toilsome hours of attendance at the manufactory, the shop, and the counting-house. These will be felt to be inimical to man's moral and intellectual progression, and be restricted. This result I hail as a positive advantage, believing, as I do, that all our wants may be amply supplied, and that time may still be left us to cultivate and enjoy our rational powers. Should this result follow in the course of ages, it will be an example, not of study producing incapacity for business, but of moral and intellectual enlightenment regulating the plan of life, and reducing it into conformity with the constitution of our rational nature.

It will improve fitness for civil duties.

Our labouring classes have votes for members of Parliament, and exercise political power. From among them are chosen the managers of many of the Hospitals for educating children, both male and female, in Edinburgh. They become Commissioners of Police, and, in that capacity, superintend all public measures for increasing the health and comfort of the citizens. As members of Parochial Boards, they are entrusted with the management of the poor, and the education and training of the pauper children. They are elected members of the Town-council of Edinburgh, and become the patrons of the City's public schools, of the High School, of most of the Chairs in the University, and of the City Churches. Society is, at present, in a state of visible transition. Old ideas, habits, and practices, are fast disappearing, and the public mind is bounding forward eagerly in search of new and untried institutions. Is it not the interest of all, that sound knowledge of Physical Science and the nature of man, and through them of the laws of God's Secular Providence, should be diffused among all ranks; and particularly among that class which is respectable by its morality, and influential by its property, and which requires only intellectual information to render it at once the ornament and safeguard of the state?

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[1] Letter to the *Economist* of 18th May, 1847, in reply to the above mentioned article.

Working men begin to act on all this.

Mechanics Institutions provide instruction in science for operative tradesmen; and the Universities open their gates for the aristocracy: but females of all ranks, and the middle classes of citizens, although at least as important and interesting from their numbers, their position, and their wealth, as either of the other two, have hitherto been overlooked. They are now pursuing the only course that can conduct them to an equality in point of knowledge with the classes above and below them in the social scale,—coming forward to provide the means of instruction for themselves. This is precisely what they ought to do. They possess among themselves too many well-informed, able, and active men, to render it necessary for them to go into leading-strings under the great in Literature and Science; and too much wealth to permit them to solicit pecuniary aid from any individuals out of their own circle. They come forth, therefore, in their own strength and might, conscious that, by union and co-operation, they can accomplish their own intellectual regeneration. Edinburgh stands pre-eminent in literary and philosophical reputation among the cities of the world; but she would place a still more noble crown of glory on her head, could she boast of industrious citizens combining talents for every species of practical usefulness, with refined taste and cultivated understandings. She would then become the preceptress of the world; and prove, by her example, that labour, intelligence, morality, and religion, go hand in hand in promoting the highest enjoyments of man.[1]

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[1] Popular Education, pp. 72, 73. The above was written in 1848, the year of the French Revolution (see p. 517), of the establishment of George Combe's Secular School in Edinburgh and of similar schools elsewhere (see p. 201 *et seq.*), and of increased interest and agitation in favour of a broader and more general education. See his "Life" by Charles Gibbon, vol. ii.

CHAPTER IV.

THE POLITICAL NEED OF UNIVERSAL POPULAR EDUCATION.

1. THE POLITICAL NEED OF UNIVERSAL POPULAR EDUCATION SHOWN IN REFERENCE TO GREAT BRITAIN.

The education of the masses necessary for general safety;

ONE grand cause of the prevailing indifference to the general education of the people may be found in the want of political power on the part of the masses. We are no believers in the capacity of ignorance successfully to execute social functions which require knowledge and experience for their beneficial exercise, and still less in the notion that any multiples of ignorance will constitute knowledge. But in *this* we have undoubted faith—that if the people possessed political power, the mere selfish instincts of the upper and middle classes would render them as anxious to educate them, as they have hitherto been apathetic. When we visit the lion in his cage, and are satisfied that the bars have strength sufficient to confine him, we look with indifference, or mere curiosity, on his teeth and claws; but, break down the iron gratings and let him loose upon us, or shut us up beside him, and we should hasten to extract, if we could, those implements of destruction. Thus it is with the people. While we are able, by horse, foot and artillery, criminal officers, judges and gaols, to restrain them, with all their rude habits and fierce instincts rife within them, we quietly leave them in degradation until we settle our own ecclesiastical and theological disputes regarding the persons by whom, and the manner in which, their teeth and claws should be removed.

Especially when invested with political power.

Were they once invested with votes for parliamentary representatives, and let loose into the political arena, other counsels would speedily be seen to prevail. In the United States of America, we were witnesses to this result. When the masses, enjoying universal suffrage, began to take an interest in political questions, and to decide them by their votes, every form of conservatism became alarmed. The rich discovered that their lives and property were in the hands of the people, and there arose among them one unanimous cry, Let which would become more discontented and impatient, the nearer it was brought to the line which separated it from the represented. To leave the people unrepresented, and to attempt to perpetuate the selfish reign of the upper classes, is neither desirable nor practicable. The working classes are God's creatures, and are as well entitled to justice as the higher ranks. By the peculiar institutions of this country, the middle classes have been trained to admire and act with the higher; but when their eyes are thoroughly opened to the injustice which has been inflicted on the lower, this idol-worship will cease. Besides, the increasing intelligence of the labouring classes will render their calls for justice irresistible.

Especially with universal suffrage.

If we assume, then, the population of Great Britain and Ireland to amount to twenty-four millions,[1] and that the non-electors are to the electors as eight to one; this will give twenty-one millons of unrepresented persons in the whole of the United Kingdom; or, to obtain round numbers, we may assume them to amount to twenty millions. Suppose the kingdom were divided into 100 districts, each containing a population of 200,000 unrepresented persons. If universal suffrage—limited only by requiring in an elector six months' residence within his ward or county previous to an election, freedom from conviction for felony, and twenty-one years of age—were established, and the power of electing one member of the House of Commons were given to each district, the following results might be expected probably to ensue:—The mental faculties of the labouring classes would be provided with a legitimate field of political action, which I consider useful in prompting them to improve their moral and intellectual condition. There would be no non-represented class, to foment secret discontent and resistance to the laws: There would be no danger of anarchy, because the members who represent the property of the country would still constitute a large majority in Parliament. The labouring classes would have legitimate organs in the Legislature capable not only of making their grievances known, but of obtaining, to some extent, the redress of them: In all measures regarding which the representatives of property were nearly equally divided, these hundred members could cast the scale on the side which was most favourable to the people. The higher classes, seeing the people possessed of political power, would be prompted by their own interest, as in the United States, to respect them more, to do them justice, and to assist in elevating their moral and physical condition; and thus by slow degrees our vicious system might be purified, and the British Constitution be adapted to the wants of increasing civilisation. The House of Commons is already too numerous; and probably 100 members might be well spared from its present members, whose places might be supplied by the representatives of the people. *Property* would still have five and a half votes to one, even supposing these representatives to be disposed to assail it, which is far from being a probable occurrence.[1]

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[1] The above estimate refers to 1831, when the population was 24,287,483. In 1871 it was nearly 32 millions (being 31,629,299), which would give, on the above calculation, 28 millions of the unrepresented.

The special need of education since the Reform Bill.

In our own country, the duty of teaching sound and practical views of the nature of man as an individual, and of the laws which regulate his social condition, to the young, has become doubly urgent since the passing of the Reform Act. Under the previous system of government, only the wealthy were allowed to exercise the political franchise, and as education was a pretty general concomitant of wealth, power and knowledge (so far as knowledge existed) were to a great degree united in the same hands. Now, however, when great property is no longer indispensable to the exercise of political influence, it is necessary to extend and improve general education. The middle classes of this country have in their own hands the power of returning a majority of the House of Commons; and, as the Commons hold the strings of the national purse, and, when nearly unanimous, exercise an irresistible influence in the state, it is obvious that those who elect them ought to be educated and rational men.

Its need for improving legislation.

In past ages, government has been conducted too often on short-sighted empirical principles, and rarely on the basis of a sound and comprehensive philosophy of man's nature and wants: hence the wars undertaken for futile and immoral purposes; hence the heavy taxes which oppress industry and obstruct prosperity; hence, also, the restrictions, protections, and absurd monopolies, which disgrace the statute-book of the nation;—all of which are not only direct evils, but are attended by this secondary disadvantage, that they have absorbed the funds, and consumed the time and mental energy, which, under a better system, would have been dedicated to the improvement of national and public institutions. Henceforth, the government of this country must be animated by, and act up to, the general intelligence of the nation; but it will be impossible for it to advance to any considerable extent beyond it. Every patriot, therefore, will find in this fact an additional motive to qualify himself for expanding the minds, and directing the steps, of the rising generation, that Britain's glory and happiness may pass, untarnished and unimpaired, to the remotest posterity of virtuous and enlightened men.[1]

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[1] America, vol. iii. pp. 374-6.

Improved education would lessen the danger of revolution.

A new Revolution has taken place in France;[2] Louis Philippe has been dethroned, and a Republic proclaimed. Whatever may be the immediate consequences of this event, I cannot doubt that its ultimate result will be the extension of the power of the people in every country of Europe, and especially in our own. Not a day should be lost, therefore, in qualifying the people, by Instruction and Training, to distinguish between good and evil, and between the possible and the impossible, in human institutions. Hitherto, the cause of National Education has been greatly impeded by contentions regarding the teaching of religious doctrines in schools. In a series of pamphlets lately published,[3] I have endeavoured to show: that the world, both moral and physical, is governed by natural laws, instituted by the Creator to serve as guides to human conduct; and that the great aim of Secular education should be to communicate a knowledge of these laws, and of the mode in which they are administered, and to train the young to yield obedience to them in their actions. Such an education would tend to protect a country from the evils of revolution. If there be Divine arrangements in nature, connecting consequences of good and evil with every mode of action, and if it be impossible to reach either individual or social happiness except by submitting to them, the people may be enabled to understand that that form of government will be most perfect which coincides most closely with their requirements. No revolution can unseat the Eternal Ruler of the Universe, or alter, or enable men to evade, His laws.

And, if Real, would render it impossible.

If this truth were demonstrated to the youthful mind as a practical fact, and the rising generation were trained to pay homage to it and its consequences, in their conduct, we should at last feel that social order rested on the basis of nature. The points of religious doctrine on which rival sects differ, are feeble as cobwebs in restraining an excited people in the whirlwind of revolutionary passion; but the truths of religion in which all are agreed, fortified by a deep conviction that the Divine Ruler has established, even in this world, an inseparable connection between virtue, both public and private, and prosperity, might probably furnish a firmer basis for the maintenance of social order, than these discordant doctrines have ever afforded. True religion would harmonise with, hallow, vivify, and render practical, a scheme of education founded on the principles revealed to man in the order of God's Secular Providence.[1]

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[1] Moral Philosophy, Lecture VII.

[2] That of 1848.

[3] Remarks on National Education, on the Relation between Religion and Science, and What should Secular Education Embrace?—all embodied in the present work.

The contrast between the educated and uneducated citizen.

A well *instructed* citizen will consider the influence of any law on the general welfare before he consents to its enactment; and a well *trained* citizen will not only obey that law when enacted, but lend his whole moral and physical energies, if necessary, to enforce its observance by all, until repealed by constitutional authority. An *ill-instructed* citizen will clamour for the enactment of any law which promises to relieve *him* from an individual inconvenience, or to confer on him an individual advantage, without much consideration concerning its general effects; and an *ill-trained* citizen will seek to subject the magistrates, judges, and the law to his own control, that he may bend them in subserviency to his interest, his ambition, or his inclinations, from day to day, as these arise and take different directions. The *ill-trained* citizen takes counsel of his self-will; and self-will, uninstructed and untrained to the guidance of moral principle, leads to destruction.[2]

2. THE POLITICAL NEED OF UNIVERSAL POPULAR EDUCATION ILLUSTRATED BY REFERENCE TO THE UNITED STATES.

Education is specially necessary in a Republic.

The error has been in following, for too long a period, the pernicious example of the church and aristocracy of England,—that of neglecting to prepare the minds of the people, by education, for wielding with success the vast power which the American institutions have committed to their hands. It is true that the education of the people is *now*[3] attracting serious attention; but it is only recently that this has been the case. The active generation at present on the stage is greatly under-educated in reference to their political powers and their duties, and fifty years from the present time must elapse before the real effects of the American institutions can be fairly judged of by their influence on an instructed generation. Even at this day, notwithstanding all past experience, the conviction is not general among the Whig party, that their only chance of *retaining* power (for they may gain it by accident for a time) lies in raising the mental condition of the people up to that degree of intelligence which will enable them to understand the moral and political principles on which the welfare of nations is founded, and in *training* them to act in accordance with these. It is true that even the purely selfish among the rich have discovered that they are in the hands of the masses, whose ignorance and excitability alarm them. They are, therefore, at last seriously desirous to educate them for self-preservation, if from no higher motive; just as they would desire to pare the claws of a wild beast that had unfortunately got into the drawing-room, and could not be expelled:—but do not many of them still linger over the condition of European society with regret, and lament in their hearts, that the people are their masters, and that they cannot do without them?[1]

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[1] Pref. to 3d Edit. (1848) of Popular Education, first published in 1833.

[2] America, vol. iii. p. 253.

[3] 1839, when George Combe was in America. See a history of education there, in Part Fifth, chap. iv. sect. 2.

Education is specially necessary in a Republic.

I ask, Are your schools, your literature, your daily maxims and pursuits, and the spirit which animates the masses of your people, steadily, systematically, and successfully directed towards the attainment of high and honourable objects? Are they adequate to the formation of a public opinion under which a virtuous and enlightened mind may live in peace, and rejoice, and with which it can cordially co-operate? When I converse with your wisest citizens, many of them concede that such should be the objects of your institutions, manners, and pursuits; and they labour to reach them: but they often lament the vast interval which lies between these great conceptions and their accomplishment. The enlightened philanthropists of this country desire to see commenced, in earnest, a system of Training and Instruction which shall be really capable of preparing the young republican for the discharge of the highest duties which a rational being can be called on to execute, in a manner and in a spirit becoming their grandeur, dignity, and utility; but they experience extraordinary difficulties, arising from the ignorance and the power of the people, in realising their aspirations.

It should aim at forming an enlightened public opinion.

Many who now hear me, and who participate in these desires, will confirm what I say. I was invited to come to this country by some

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[1] America, vol. iii. p. 25.

The urgent need of an improved education.

philanthropists, who believed that Phrenology would aid your people in discovering at once their own need of better instruction, and the means of obtaining it. This philosophy lays open, even to the most ordinary mind, an intelligible view of the human faculties; it carries home a striking conviction of the indispensable necessity of education to their improvement and direction, and presents tangible principles for administering this instruction. I have long been an admirer of your institutions, and an advocate of man's capability of raising his Moral, Religious, and Intellectual powers to supremacy over his Animal Propensities; and I obeyed the call which was sent to me. Far from disapproving of your institutions, I admire them, and have confidence in them; but it is my duty to express my conviction, that your people need a vastly improved education to render them equal to the faithful and successful discharge of the important duties committed to them by the institutions of the States and of the Federal Government, and to form a public opinion adequate to the due performance of the high duties assigned to this power.[1]

The danger of ignorant popular excitement

In Austria and Prussia, the safety-valve of the body politic is loaded with the weight of an established church, and 100,000 bayonets. In cases of discontent, opinion cannot escape, until it has burst through these compressing powers, and then it explodes with terrific violence. Here the safety-valve bears no load except the sense of each individual mind. Any strong internal excitement, or the application of external provocation, causes the Propensities and Sentiments to glow, and to express themselves with instantaneous energy. Their voice is heard in Europe, and the timid hold their breath, waiting for a grand explosion. Perhaps it never comes. In your country, ten times ten thousand valves let off excited opinion, so rapidly that the body-politic cools down to its natural heat as quickly as its temperature was raised. But every one of these excitements shakes credit, deranges trade, ruins fortunes, is attended by suffering, and leaves many pangs behind.

Load, then, your safety-valves with knowledge of nature and religion, and train your young minds to control passion by virtue; and you will find these means more effectual than millions of armed soldiers to insure your prosperity and happiness. Mr Wyse, in his work entitled "Education Reform,"[2] says, "A period of total quiet,

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[1] America, vol. iii. pp. 416–7.

[2] Vol. i. p. 48. The author was Thomas Wyse, M.P., an active worker in

It can be regulated only by Education.

resulting from a long continued acquiescence in old institutions, leaves a very different imprint upon the national mind from that which is the necessary consequence of a general breaking up of old principles and forms, and an earnest search after new. In the first instance, an education of stimulants becomes necessary. It is essential to the healthy activity of the body-politic. In the second, steadiness, love of order, mutual toleration, the sacrifice of private resentments and factious interests to general good, should be the great lessons of National Education." Such, assuredly, should be the education of your sons.

Yours is a noble destiny. Providence has assigned to you the duty of proving, by experiment, whether man be, or be not, a rational and moral being, capable of working out his own way to virtue and enjoyment, under the guidance of Reason and Scripture, unfettered by despotic power, and unchained by law-enacted creeds. Your institutions and physical condition call all your faculties into vivid action. Among these, the Animal Propensities, as I have remarked, are not dormant; but those observers err who allow their attention to be arrested only, or chiefly, by the abuses of the Propensities which appear in your people. Virtue consists in meeting and overcoming temptation. As you, then, by possessing freedom, are tempted above other nations, you will show a virtue above them all, if you nobly resist every seducing influence and march boldly onward in the paths of rectitude and wisdom. The subjects of a despot, whose every thought and action are ruled by other minds, have little merit in exhibiting order and decorum in their public conduct. You will prove the true strength of your moral principles, when you restrain your passions by your own virtuous resolves, and obey just laws enacted by yourselves. It is to aid you in this admirable course of action, in so far as the feeble abilities of one individual will go, that I now address to you these observations. And I again ask, Do your schools teach all that your young voters should know? all that the best of your citizens would wish them to know, when they act as electors and arbitrators of the public welfare?—I believe not. If you ask how they can be im-

Education necessary for political self-government;

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the educational struggles at the beginning of the century, one of the founders, and chairman, of the Central Society of Education, which did so much to disseminate broader views on the subject, author of numerous papers on its publications and elsewhere, and introducer of the Irish Education Bill of 1835. He was also a correspondent of George Combe's. See George Combe's "Life," by Charles Gibbon, vol. i. p. 307.

proved, you will be answered by as many projects and proposals for education as if you had inquired for the philosopher's stone.

And for developing the real greatness of a country.

So far from education supplying this knowledge, it appears to me, that a vast proportion of your people have not yet obtained a glimpse of what, I hope, is destined to constitute the real greatness and glory of your country. I find here, the ambition of many individuals directed towards raising the United States to the rank of the richest and the most powerful nation in the world. They bend their whole minds to the increase of her commercial, agricultural, naval, and military grandeur. This is not wrong; but it is not *all*. Thousands of your young men pant for war, in order to wreath the laurels of victory round the brow of their native country; and they call this patriotism. I desire to see higher and better views entertained of the glories and destiny of the United States. History presents only the records of wars, devastations, and selfish aggrandisement pursued by all governments that have ever existed; republics, oligarchies, monarchies,—all have run one wild career of immorality and ambition. If your nation consider herself to have no higher vocation than these, she ceases to be an object of moral interest to the philanthropist and philosopher. If her annals be destined to record the contests only of faction against faction, of party against party, or of the nation against foreign nations, the friend of human improvement must turn from her in despair. The grand duty assigned to Americans is to raise up and exhibit to the world a nation great in virtue: to shew, for the first time, since history began, a people universally educated; a people prosperous, refined, happy, and gigantically great, by the realisation, in their institutions, in their private lives, and in their public actions, of the principles of Christianity.[1]

[1] America, vol. iii. pp. 409–413.

CHAPTER V.

ANSWERS TO OBJECTIONS TO UNIVERSAL POPULAR EDUCATION.

I. OBJECTIONS FROM ITS EFFECTS ON THE INDIVIDUAL.

(1.) "A little learning is a dangerous thing."

AN objection may be urged, that only superficial knowledge can be communicated, and that the tendency of such instruction is to encourage pedantry and discontent. The line of Pope, that "a little *learning* is a dangerous thing,"[1] is often quoted in opposition to all proposals for instructing the industrious classes. There is much force in this objection, if "learning" be confined to mere reading and writing; but it is pointless when applied to instruction in Natural Science, which is the kind of knowledge in favour of which I am now pleading.

When it may be dangerous.

"It would be easy to show," says Dr Caldwell, "that, under the government of the United States, a very limited amount of school-learning, diffused among the people, is calculated, politically speaking, to injure, rather than to benefit them. I allude to that degree of attainment, which qualifies them merely to read newspapers, and understand the meaning of what they contain, without enabling them to judge of its soundness. A people only thus far instructed, are in the fittest of all conditions to be imposed on and misled by artful demagogues and dishonest presses. When party spirit runs high, and the political passions become inflamed, they are induced, by intriguing men, to read papers only on one side of the question. The consequence is plain. Not being able to judge of the truth of the matter laid before them, as respects either the fitness of men, or the tendency of measures, they are liable to be seduced into the most ruinous courses. Were they unable to read at all, or did they never see a newspaper, their condition would be less dangerous. Demagogues would have less power to delude and injure them. In the present state of our country, it is emphatically true, as relates to the great body of the people, that,

"A little learning is a dangerous thing;"

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[1] The full couplet in Pope is,

"A little learning is a dangerous thing;
Drink deep or taste not the Pierian spring."

On this passage, Horace Mann remarks, "One would like to know what

The education necessary to prevent this.

The only remedy for the evil consists in the *reformation of the public presses*, or the *diffusion of more learning, knowledge, and virtue, among the people.* The former, it is to be apprehended, is not soon to be looked for. On the latter alone, therefore, rest the fate of our government, and the hope of our country. Let the community at large be taught to think correctly and feel soundly, and they will not only have a secure protection against the falsehood and corruption of the presses; these sources of mischief will cease to be encouraged. They must then choose between *reformation* and *extinction.* At the present moment, some of our public presses are the arch-engines of evil to our country, and a disgrace to the human character."[1]

I consider entire ignorance as more dangerous than partial knowledge.

What "learning" means in this objection.

"Learning," in Pope's time, meant an acquaintance with Latin and Greek, and with the barbarous jargons of Logic and Metaphysics, which constituted the chief stock of knowledge of educated men in his day. Science has, to a great extent, been created since the time of Pope; and it has been brought within the reach of the industrious classes only within these twenty years. His remark, therefore, is wholly inapplicable to instruction in scientific knowledge. So far as it goes, it is instruction in the laws of God's Secular Providence. A *little* of such knowledge is better than *none at all*, on the same principle that it is better to know our way clearly, although only for one mile, than to be entirely ignorant to which hand to turn on our journey through life. A man who has learned how to deal with two causes which produce two effects involving his happiness, is more profitably wise than he who is acquainted with only one. If the instruction be useful, the smallest quantity cannot possibly injure, while it may create an appetite for more.

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extent of acquired knowledge would constitute 'deep drinking' in the sense of this authority; or, in surveying the vastness of the works of God, whether all that Pope himself knew, though it were multiplied a hundred-fold, would not be 'a dangerous thing.' The doctrine and this passage is as false in the eye of reason, as the simile is in the creed of a teetotaler!" Lecture, in 1840, on "a Historical View of Education."

[1] A Discourse on the Advantages of a National University, especially in its influence on the Union of the United States; delivered September 25, 1832. By Charles Caldwell, M. D.

[2] "This maxim appeared when Greek and Latin were regarded as '*learning*,' and it meant that a man who knew only a little of these was not much wiser for his knowledge, and that he was liable to become conceited and foolish.

The kind of "learning" that should be given.

I deny, however, that the knowledge communicated will necessarily be superficial. If lecturers do their duty, solid and extensive instruction in the great leading principles of the sciences may be communicated in popular lectures.[1] An intelligent student of Geography may be very far behind a practical surveyor in his knowledge of the localities of a particular country, every acre of which the surveyor has measured and delineated; but his knowledge of the relative positions of all important places may still be accurate, extensive, and useful. The popular student of Anatomy and Physiology may be far short of the skill which would enable him to tie an artery or to amputate a limb: but he may still possess precise and valuable information concerning the structure and functions of the great organs, on the proper condition of which health and life depend; and he may understand and be able practically to apply the principles thus unfolded. Lectures have also a very beneficial influence in communicating to the mind an interest in any science treated of, and a familiarity with its general principles, which enable the student to pursue his studies of it in books, with a zeal and facility which could not otherwise be attained.

(2.) General education would obstruct the growth of Genius.

It has been urged against Popular instruction, that, by communicating a smattering of knowledge to all, it will prevent the growth of great geniuses and profound philosophers; in short, that we shall have a superficially learned society, but no masters in science. This is the argument of a common-place mind, which has acquired celebrity by arduous study of other men's thoughts, and which dreads the approach of the vulgar to its shrine of self-importance and conceit. There is a simple answer to the argument. Genius either *is*, or is *not*, necessary to reach the profundities of science. If it be necessary,—then my argument is, that genius is an inherent

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This might be true of a slender knowledge of Greek and Latin, but Real learning is knowledge of the order of nature, and the smallest degree of it is useful." From speech by George Combe on National Education, in Aberdeen, in 1851. Professor Nichol, pointing out the mistake in confounding Education with mere Instruction says, in speaking of Pope's couplet, "The fallacy in itself is a transparent one; but no man will venture to denominate as dangerous, *a little culture, or Moral and Intellectual Training.* The work of Education includes both culture and instruction; but that which is wholly inseparable from it is—culture." Preliminary Dissertation to Willm's "Education of the People," p. lxxii. (Glasgow, William Lang).

[1] George Combe spoke the above in advocating popular lectures (such as those in connection with the Edinburgh Philosophical Institution), which he was one of the earliest to begin; as told in the Introduction, part iii. 3.

The relation of education to Genius.

quality of a few gifted minds;[1] it goes on in its own way conquering and to conquer: it rejoices in the fellowship of human beings, although their progress be but a furlong, while it advances a league; its power is within itself, and it is not impeded by the presence of a multitude moving in the same direction. It is cheered by their proximity, animated by their applause, and feels more confident of its reward, in proportion as they become capable of appreciating its achievements. Genius, therefore, will not stop short in its high career, because the denizens of the busy world are gazing at its progress in fond admiration, and advancing in the same path, although at a vast and perhaps an impassable distance. If genius be not necessary to profound acquirements in Philosophy and Science, then the higher the common standard of attainment is raised, the farther ahead must those proceed who desire to hold a prominent station in public esteem. All the motives of interest and ambition by which common minds are actuated, increase in proportion as the class is numerous and enlightened by which the prizes are awarded. This objection, therefore, has no solid foundation.

(3.) The study of Science incapacitates for business.

It has also been maintained, that the study of Science incapacitates the mind, or at least gives it a distaste, for business. This is an important objection, and demands serious consideration. What should we say to the assertion, that the practice of walking unfitted a man for running; or that the habit of eating wholesome food had a great tendency to impair the digestive organs? We should laugh at such absurdities: because the man runs by means of the same bones, tendons, and muscles by which he walks; and walking is the moderate, natural, and healthy exercise of those parts; so that, while it may well augment his capacity for running, it cannot possibly impair it, unless carried to excess. Wholesome food, also, is the natural stimulus of the digestive organs, and, if used in moderation, it is the best prescription for preserving them in health; and, in point of fact, there can be no vigour in the function if it be withheld. Now, the Creator has constituted external nature and the Moral and Intellectual faculties of man, and adapted them to each other, with the same wisdom which he has manifested in adapting the stomach to food, and the muscles to the law of gravitation. The effects of knowledge are, to strengthen the Understanding and to enable it to act vigorously, and to judge soundly of the things and beings with which it is dealing. A man transacts business by means of the same mental faculties with which he studies useful science.

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[1] See Note 2, p. 276, on George Combe's ideas of Genius.

The moderate pursuit of science, therefore, has the same tendency to strengthen, improve, and gratify the mental faculties, that the use of wholesome food has to benefit the digestive functions. It is absurd, then, to assert either that the study of nature is *not* calculated to strengthen these powers, or that a study which *is* calculated to strengthen them, unfits them for business.

The sources of this objection.

The sources of the prevalent errors on this head can be easily traced. If young persons give themselves up to the excessive and exclusive study of works of fiction and imagination, they impair their relish for, and also their powers of conducting, practical business; because most works of fiction are addressed more to the Propensities and inferior Sentiments, than to the Moral and Intellectual faculties. The recital of horrors exercises Destructiveness; the description of wild and mysterious events arouses Wonder, Cautiousness, and Secretiveness: but these are not the chief faculties by means of which business is transacted. When these faculties become highly active, the transition to sober observation and reflection is painful, and business is disliked. The *exclusive* study of the Fine Arts, even, is not favourable to the formation of business habits. Painting, poetry, sculpture, and music, exercise Ideality, the Moral Sentiments, and several of the Intellectual Powers; and unquestionably communicate to these refinement and susceptibility, but they leave many of the subordinate Feelings and some of the Reflecting faculties uncultivated; while the objects with which they are chiefly conversant, belong to the world of imagination. The study of the Fine Arts, therefore, when exclusive, both unfits the faculties for practical business, and withholds ideas connected with worldly affairs. Many persons, from observing the injurious effects of an excessive devotion to those pursuits on the mind's aptitude for serious study, have concluded that every species of mental exercise that is not laborious and disagreeable, must have a similar effect; and that, therefore, science also is apt to obstruct the formation of habits of energetic application. But the cases are widely different.

Educational value of Scientific studies;

The kind of exercise which the study of the Natural Sciences gives to the mind, is closely analogous to that which is necessary in the management of practical affairs. Those persons, therefore, who imagine that they have facts in support of the baneful influence of scientific instruction, in unfitting the mind for business, must have in view only the exclusive pursuit of one abstract science, such as Mathematics, which is quite different from what is here recommended.

And of the Fine Arts, rightly pursued.

The study of the Fine Arts, poetry, and works of fiction, however, should not be undervalued. They are sources of great enjoyment, and when kept within due bounds, refine, exalt, and expand the mind, without weakening it. It is only excessive indulgence in the pleasures which they afford, that is practically injurious.[1]

(4.) Education renders the lower classes too refined for their condition

We lately heard an extensive landed proprietor, a man of taste and talent, and himself an author, gravely expounding the danger of rendering the working classes too refined for their inevitable condition and duties, and, in consequence, discontented and dangerous, if their tastes and intellect were awakened and enlarged by a really good education. "If," said he, "all are rendered intelligent, and trained to skilled labour, where shall we find hewers of wood and drawers of water?"

This gentleman and all his class may keep their minds at ease on this point. Different capacities are bestowed by nature on different individuals, and, after we have done our best to instruct and train the people, there will always remain a sufficient number of them, whom no education, however much it may improve their morality, will ever raise intellectually above the humbler duties of civilised life. By a thorough education of the employers of labour, also, and, by the interposition of science, the duties of the humblest working man may be rendered far less irksome than they now are, and, by this means, his position may be improved to an extent quite equal to his advance in intelligence and refinement.[2]

(5.) Education produces restlessness and unhappiness.

Many absurd theories have been advanced in regard to the bad effects of education upon the lower and middle classes of the community. We have been told, that, "after a desire of rising seizes a peasant or mechanic, his whole life is spent in the fevered anxiety of discontent and unhappiness—a sort of diseased restlessness, of which he becomes the passive victim, infects his mind, and tinges his pursuits; and, even when his friends are looking up to his labour as superhuman, while they are admiring or envying his advancement in knowledge, his nights are often spent in sleepless musings, and his days consumed in the labour at which his whole soul revolts, but which he finds indispensable to his schemes of advancement. He feels his condition as miserable as that of the slave chained to the galley-oar; because he knows, from his books, situations of a different kind."

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[1] Popular Education, pp. 68–72.

[2] From article on Secular Education, in *Westminster Review* of July, 1852.

The state of the uneducated.

Such notions are founded on a lamentable ignorance of human nature. The individual whose higher faculties are not cultivated, is just a human being abandoned to the impulses of the Propensities and Sentiments which are naturally most powerful in his mind. These are always the lower Propensities of our nature; and hence savage and uncultivated man is a being inspired by strong Propensities of Amativeness, Destructiveness, Combativeness, Acquisitiveness, without Moral faculties equally active to direct or modify their manifestations. And, in point of fact, the savage character is uniformly found to be a compound of lust, ferocity, pugnacity, and dishonesty, corresponding completely with what might be expected from the unrestrained manifestations of the faculties which predominate in his constitution. Human nature is the same in every country; and the labourer of civilised life is naturally just as prone to disgusting and dreadful vices as the savage of the wilderness; and the actual difference of character betwixt them is attributable entirely to the education of the latter. In the former, the faculties of the lower Propensities are excited to vehement activity by his situation. In the latter, the manifestations of these faculties are repressed, and his higher powers more or less cultivated. If we cultivate the Moral Sentiments of the mechanic, his lower faculties will be controlled, in proportion as the energy of those is increased. If we cultivate his Knowing and Reflecting faculties, we open up to him sources of gratification of a higher nature, and give him an increased power of usefulness, and a capacity of adapting means to an end, which will not only benefit the individual himself, but make him a much more useful member of society. If nature have bestowed upon him powerful faculties of Ideality, Causality, and Comparison, it is very probable that, by education, we shall give him a dislike to the meaner drudgeries of labour. But, in doing so, we shall capacitate him for a higher sphere of action. If nature implant the higher faculties eminently powerful in any individual, and if circumstances conspire to oppose the manifestation of them in their legitimate sphere of action, his life will present a melancholy history of high-minded efforts continually failing, and continually plunging him into deeper misery, because the faculties were not properly directed. Of this, the life of Burns, and the lives of many other eminent but unfortunate men, furnish too conspicuous examples. In them,

Effects of education on the faculties and their spheres of action.

these faculties were innate; and, being naturally great, produced great conceptions, notwithstanding the abject circumstances in which their possessors were placed. If such individuals had been placed in circumstances where their faculties would have had scope for an unobstructed activity, the individuals themselves would have been happy, and their lives useful to society.

The effects of education are bounded by natural capacity.

Let no one apprehend that, by education, we shall be in danger of rendering the mass of the lower population disgusted with their employments, and lead them to aspire to elevated destinies. The effects of education are always bounded by the natural capacity of the mind to be educated; and nature has taken care to provide a sufficient supply of men for every rank of life, by making the endowment of the faculties of a large majority of the race so moderate in degree that they will never be enabled by the efforts of others to aspire to anything much above the level of moderation.[1]

(6.) Education fosters self-conceit.

I have heard an objection stated against cultivating the Reflecting faculties by exercise, that, by doing so, we are apt to produce conceit in the pupil, and an exaggerated opinion of his own attainments. Such an objection, however, is founded upon ignorance of the separate functions of the faculties. It is the faculty of Self-esteem alone which produces conceit; and exaggerated opinions of ourselves are in proportion to the activity of that faculty, and not to the cultivation of the Understanding. No doubt, if the faculty of Self-esteem be particularly energetic in an individual, and if he write an essay at college, he will be exceedingly proud of it, and, in all probability, will entertain exaggerated opinions of its merits. But it is not the writing of the essay which produces the Sentiment of Self-esteem; the Sentiment was previously energetic in his mind, and that circumstance only gives it a particular direction. Had he not written the essay, he would have been equally proud, but of some other real or supposed accomplishment; and, as it is certainly better to be proud of intellectual talent than of inferior attainments, the writing of the essay must be regarded as a fortunate incident in his education.[2]

As the direct tendency of a good education, is to repress the manifestations of the lower Propensities, and to cultivate the superior Sentiments and the Knowing and Reflecting faculties, we may hold it as an indisputable axiom that, where an individual has been well educated, and his subsequent conduct has not corresponded to the instructions he has received, his imperfections are to be attributed to nature, and not to education. In some individuals, the natural endowment of the lower faculties is so great, that it is a matter of extreme difficulty to subdue their energy; and hence, in such individuals, education may not always appear to have produced its full effects. But education improves even the worst natures to a considerable extent. If the ferocity, the sensuality, the avarice, or the lust of dominion of such persons is, at any time, apparently restrained by the predominance of higher Sentiments, this advantage may be owing, in no inconsiderable degree, to education; for we have only to look to the savage state to be satisfied of the general brutality of man when uncultivated.[1]

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[1] Essays on Phrenology (1819), p. 333. [2] Essays on Phrenology (1819) p. 331.

(7.) The small results produced by education.

2. OBJECTIONS RAISED ON SOCIAL AND POLITICAL GROUNDS.

(1.) Education would render the lower classes discontented.

But it is said that the lower orders do not need such an education as the upper classes receive—that it would unfit them for their stations, and render them discontented and unhappy. Now, this is the very result, above all others, which I desire to bring about. It appears to me that there is no hope for the working men until they shall become dissatisfied with ignorance and dirt, with crowded ill-aired houses, with hard toil and the absence of refined recreation, with whisky as a substitute for the enjoyments of a cultivated mind acting in a healthy body; in short, until they shall open their understandings and ask why is it that the upper and middle classes live in possession of so many enjoyments to which they do not attain? You have often asked this question of yourselves and of others, and you have received many answers. You have been told by the clergy, that you are not sufficiently religious—that you must pray more, and read your Bibles better, and do, in all things, as they bid you. You are told by radical reformers, that you must obtain votes for members of Parliament, and, through them, amendments of the laws. Many of those who give you this advice are honest and sensible men; but there are some individuals who vehemently urge it for selfish ends,—to obtain a sway over you and your money, for their own use. By political economists, you are informed, that you must be industrious and economical and save capital, and then

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[1] Essays on Phrenology (1819) p. 337.

manufacture and trade for your own profit. All these m
improving your condition are good, but they are incomplete.
must add to them more knowledge. While your Intellects c
uninstructed regarding the chief natural conditions on whic
welfare and elevation depend, and your Moral Sentiments
feeble and incapable of controlling your Propensities, your
the social scale appears to be impossible.[1]

(2.) It would make them uneasy and restless in their station.

A friend has called my attention to an article in *Blac*
Magazine for February 1839, No. 280. The object of i
show, that the mass of the people never can become enlig
and refined; that, therefore, education can render the
uneasy and restless; that ignorance is to them the par
contentment; but that, if they must be educated, a religious
tion is the only one fitted to do them good. It render
patient, humble, and moral, and relieves the hardships of the
sent lot by the prospect of a bright eternity. "How stra
said my friend, "do such sentiments sound in America,
we must enlighten and refine the mass of the people or peris
they rule our destinies. The author obviously considers Eng
the world, and the present condition of her people as the on
in which the human race can ever exist! If the article be
in good faith, the author needs much to be educated himse
he is an aristocrat or a priest, endeavouring to prop up a
which devotes eight out of every ten of the English people
and ignorance, without prospect of relief on this side of the g
for the benefit of the remaining two—he deserves to be doo
undergo this fate himself, that he may know, by experien
efficacy of his own prescriptions for human misery."[2]

(3.) It would subvert social order.

But perhaps some conservative souls are alarmed at the s
sion of social order which they imagine that such an edu
would produce. Let them hush their fears. Knowledge of
works and obedience to God's laws never can introduce ev
thousand prejudices would be banished from our minds, a
should rejoice in a new world of happiness and freedom. It
then be clearly seen that labour is not a curse, but a privilege

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[1] Glasgow Speech on National Education, in 1851. From the *North*
Daily Mail.

[2] America, vol. ii. pp. 189–90.

that the very notion of its being an evil has arisen from its being performed unintelligently, compulsorily, and in excess. Labour which engages the mental faculties, is pleasure; labour which exercises the muscles, promotes the circulation of the blood, aids digestion, and gives zest to repose and sweetness to sleep, is an inestimable blessing; and labour which brings increase of wealth, and adds to the refined enjoyments of cultivated men, is as honourable as it is profitable. Let no one, therefore, who admits that God ordained the external world, and created man as its administrator, dare to say that the highest instruction which we can bestow on all classes, and on the people in particular, will unfit them for their duties, and prove subversive of social order. It is impiety to heaven to breathe such a suspicion.[1]

(4.) Free institutions can exist without education.

You[2] enumerate the educational means, such as schools, universities, &c., which were in operation in Prussia before 1807,[3]—the march of general civilisation,—the emancipation of the people from serfdom, &c., as causes of the present condition of her people. I admit the existence and importance of them all; but they did not reach the lower grade of Prussians, any more than the same causes have reached the same classes in our own country, and *they* form the chief subjects of my pamphlets. I concur cordially in your estimate of the importance of free institutions, peace, and industry, to social happiness; but observation has led me to the conclusion that these operate most forcibly on those who, by *previous mental training*, are brought most fully into the natural condition which is necessary to allow scope to their influence. These institutions are agents in civilisation, but they need the aid of education to bring forth their best fruit.

(5.) Education increases royal power.

You say, "It is our opinion, in direct opposition to that of Mr Combe, that Prussian education—the drilling of the people in the national schools—has aided the royal power in retarding political reform, instead of having promoted it." On the other hand, I beg to adduce the remarks made to me by many enlightened and zealous

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[1] Glasgow Speech on National Education, in 1851. From the *North British Daily Mail.*

[2] The editor of the *Economist*, in an article of May 13th, 1847, on George Combe's educational pamphlets.

[3] The year when Germany and Prussia, then under the heel of Napoleon, began their new educational history, roused by Fichte's celebrated "Addresses to the German Nation."

Its real effects on royal power.

reformers, in those continental countries into which the Prussian education has not penetrated, and they are confirmed by my own observation. "Our common people," they have said, "are so ignorant that the Government and the priests can lead them as they please; they are incapable of understanding the importance of combination; the idea of risking individual liberty or property for social ends appears to them folly; in short, the Government knows that, while it keeps the people ignorant, it may safely tyrannise over both them and us. We have neither opinion nor physical force to fall back upon, to support us in our struggle for reform." In Prussia, again, I heard the following observations uttered ten years ago, and still more frequently since :—"Our cause is safe. The progress may be slow, but it is sure. The schools are rendering our common people intelligent. They are not only able to read, but they are learning to think. There is a great increase in the number of books circulated among them, and the character of them is improving. This capacity for reading and thinking renders them capable, in some degree, of understanding their own interests, and of acting in combination to promote them. Ours are a slow, not a very practical, but a steady and persevering people. Give us time, and we shall work out our regeneration. The Government, by instructing the whole people in military evolutions, and teaching them to read, has rendered them capable of combining, nay, of organising themselves for resistance; it has passed the sword from its own hand into ours. Nobody knows better than the King of Prussia that, if he were to do any act which should grossly outrage the public sentiment, our people could understand its consequences, and are conscious of their own strength. If led by the middle classes, which in such a case would be certain, it would be the King and public functionaries *versus* the nation. But the King will never hazard such a trial. Give us time, and we shall succeed." Your readers must judge of the degree of sense in these two representations.[1]

(6.) Education renders women unfit for domestic duties.

As to the education of the middle classes, again, we have been told, that cultivation makes them proud and fantastic in their notions, and averse to the duties of their situation in life, and incapable of fulfilling them. This has been alleged in a particular manner to be the result of cultivating the minds of the females of the middle rank. In answer to such objections, I remark that the capacity for discharging domestic duties depends upon the cultivation of the superior Sentiments, and of the Knowing and Reflecting faculties jointly. Hence, a woman who possesses Cautiousness, Conscientiousness, Benevolence, Philoprogenitiveness, and Firmness, in an eminent degree, will make an excellent daughter, sister, wife, or mother. If the faculties of Language, Constructiveness, and Time are eminently cultivated in her mind, she will possess, besides, three valuable sources of amusement to herself and of entertainment to others. And if the Reflecting faculties are also eminently cultivated, she will be still the more excellent. She will then possess a depth of penetration and a scope of Understanding, which will give her dignity as a woman, and extended usefulness as a member of society. Hence, the first requisite for constituting a good wife is vigorous and active faculties of the Moral Sentiments; and the second is a liberal endowment and cultivation of the Knowing and Reflecting faculties. Those persons, however, who think that intellectual endowment or education incapacitates woman for the duties of her situation, seem to believe, either that the Propensities and Sentiments will be manifested to most advantage when altogether undirected by intellectual power, or that cultivation of the Intellect withers up and eradicates the Moral faculties. Such ideas are too absurd to merit refutation. The best Sentiments degenerate into weakness when undirected by Reflection; and the most vigorous exercise of Understanding does not necessarily dry up the sources of Feeling. The most perfect character is made up of a happy endowment of both.

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[1] From letter to the *Economist* of May 18, 1847.

(7.) The expense to the community of popular education.

There is no *natural* obstacle to such an education being given to the working classes. All the obstacles are artificial. One of these is the expense. The advocates of Secular education propose that the schools should be free, and that the cost of maintaining them should be levied as a tax on the community at large. Of course, the larger amount of the burden would fall on the upper and middle classes, and the chief benefit would be reaped by your children. This is objected to by many. I reply that, in the diminished expense of criminal officers, gaols, transportation ships, and transportation settlements, their pockets would find a compensation. But I go farther. The upper and middle classes, who alone were members of Parliament, incurred the national debt, and the working classes are largely taxed to pay the interest of it. The army and

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[1] Essays on Phrenology (1819), p. 336.

navy defend the estates and funded property of the upper and middle classes; and you who have no estates and small possessions of any kind, contribute largely in the taxes you pay on tea, coffee, sugar, beer, whisky, tobacco, and many other articles of which you are the great consumers, to defray the expenses of these protective armaments. Let the upper and middle ranks, therefore, reciprocate your aid to them by helping you to educate your children. Such aid is due to you; it will return in blessings on their own heads, by producing security, peace, and public prosperity.[1]

(8.) Education tends to increase crime.

The enemies of education say that crime increases in proportion as education is promoted; and the statistical returns seem to favour their assertions.[2] But they forget that what is called Education is merely instruction in words and signs. The *instruments* of education have been put into men's hands, but they have not been educated. They have received no proper instruction concerning either physical or human nature, and have not been trained to the practice of goodness. Let the opponents of education show that crime has been increased by training the Intellectual faculties and Moral Sentiments to proper activity, and then we will give the matter up.[3]

In an *Essai sur la Statistique morale de la France*, by Mons. A. M. Guerry, published at Paris in 1833, it is stated that crimes against property and person are most numerous, in proportion to the population, in those departments of France—the north and east—in which the people are the best educated, the richest, and the most industrious. This must be owing partly to the increased power which education confers of doing either good or evil, and partly to defects in the education afforded.

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[1] Glasgow speech on National Education, in 1851; from the *North British Daily Mail.*

[2] In *Blackwood's Magazine* No. 255, for January 1837, p. 84, occurs the following:—"Education—that is, the conferring the power to read and write—has no tendency whatever to check crime. It is an instrument of vast force; but whether that force is to be exercised to good or bad purposes, depends entirely on the habits of the people to whom it is entrusted, and the desires in the public mind with which it exists."

[3] Boardman, p. 370. "The evils of *partial* instruction never can be the consequence of true education, the prime end and aim of which is not *Instruction* merely, but *Development;* just because Instruction is not its end or chief aim,—nay, although having a distinct and independent value, it is yet always used as an *instrument.* Just as education has advanced, to that very extent must the mind become more obedient to DUTY, and less under the control of IMPULSE."—Professor Nichol in Preliminary Dissertation to Willms' "Education of the People," p. 72. (Glasgow, William Lang, 1847).

The real conditions of the question.

M. Guerry's statement, however,—supposing it to be grounded on sufficient data,—does not show that education tends to increase rather than diminish crime; for, as a writer in the *Phrenological Journal* observes, "Until it be proved that education has the same kind of subjects to operate on in every part of France, its effects cannot be judged of from such data as those furnished by M. Guerry." There is good reason to believe that the generality of heads are better in some parts of France than in others. "Now," says the writer, "this important fact ought not to be overlooked, as it has hitherto been, in judging of the influence of education; for it can hardly be doubted that educated but inferior minds will display less morality than minds which are uneducated but naturally much superior. What should we say of a man who called in question the efficacy of medical treatment, because a patient tainted from birth with consumption, and who had long been under the care of a physician, was not so healthy as a person with naturally sound lungs, who had never taken medical advice in his life? But for the treatment, the consumptive man would have been much worse than he actually was, and probably would have died in early youth.

The relations of education to crime;

"To judge correctly, therefore, of the question at issue, we must compare the present amount of crime in particular Departments of France with its amount *in the same Departments* when there was either very little instruction or none at all. In this manner, we shall also avoid being misled by the effects of other influences, such as the density or thinness of the population, the employment of the people in agriculture or manufactures, and their residence on the coast, in the interior, or in the mountainous or fertile districts. Were such a trial made, I think it would almost without exception be found, in cases where no great change of circumstances had occurred, that, in exact proportion to the increase of education, there had been a diminution of crime. I am well aware that, by the system of Instruction generally pursued, the Moral Feelings, which restrain from crime, are wholly neglected. But cultivation even of the Intellect appears favourable to morality; first, by giving periods of repose to the lower Propensities, of whose excessive activity crime is the result; secondly, by promoting the formation of habits of regularity, subordination, and obedience; and, thirdly, by strengthening and informing the Intellect, and thereby enabling it to see

Even when merely intellectual instruction.

more clearly the dangerous consequences of crime. No doubt there are criminals on whom an excellent Intellectual education has bestowed; but instead of thence inferring that education increases the liability of mankind to crime, I think it may with great reason be asked, whether, had the same individuals wanted education altogether, their crimes would not have been more atrocious?"[1]

The effects of education when Real.

Where the Philosophy of Man is unknown, children are not taught any rational views of the order of God's providence on earth, nor are they trained to venerate and obey it; they are not instructed in the constitution of society, and obtain no sufficient information concerning the real sources of individual enjoyment and social prosperity. They are not taught any system of morals based on the nature of man and his social relations, but are left each to grope his way to happiness, guided by creeds and catechisms, which they see many men neglecting in their actions. The poor observe the rich pursuing pleasure and fashion, and if they follow such examples, they must resort to crime for the means of gratification. No solid instruction is given them—sufficient to satisfy their Understandings, that the rich themselves are straying from the paths that lead to happiness, and that it is to be found only in other and higher occupations.[2]

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[1] *Phrenological Journal* (1834–36), vol. ix., pp. 267–8.

[2] Constitution of Man, p. 300–1. M. Guerry himself says, in the same essay, p. 42: "It would be a new error to suppose that instruction is proved, by statistical inquiries, to have a tendency to increase crime. Instruction, meaning thereby reading, writing, and casting accounts, is only an instrument of which a bad or a good use may be made, according as the morality of the people stands high or low from other causes."

PART FIFTH.

HOW SHOULD THE EDUCATION OF THE COUNTRY BE CARRIED ON?

NATIONAL EDUCATION UNDER GOVERNMENT—UNSECTARIAN, SECULAR, AND FREE.

PART FIFTH

CHAPTER I.

BY WHAT AGENCIES SHOULD NATIONAL EDUCATION BE CARRIED ON?

1. SHOULD NATIONAL EDUCATION BE CARRIED ON BY THE CHURCHES?

Objections to the clerical conduct of education:

By whom, and by what social arrangements, should the two branches of Spiritual and Secular instruction be taught? The clergy of nearly all denominations answer that both should be taught by them, or by teachers directed and controlled by them. We at once consign the teaching of the Religious department to them; but let us inquire into their qualifications for superintending and controlling the *Secular* branch of public instruction.

The relation of the clergy to Secular instruction.

If experience is to guide us in solving the question, we should at once say that they are most unfit for the latter duty. Hitherto, with few exceptions, they have altogether failed to appreciate the necessity and advantage of this instruction to the well-being of the people; for the reading and writing which they patronised were avowedly given chiefly to enable the young to read the Bible. They boasted of this as their leading object; so that we are justified by facts when we affirm that, generally speaking, the clergy, in the education of the people, have ignored and withheld all profitable instruction in the order and agencies of nature by which temporal well-being is determined. They have done so, because their own education and professional pursuits were devoted to the administration, not of temporal, but of spiritual interests, and this is still, and will continue long to be, the case. They are, therefore, not qualified by experience, education, or position to superintend the Secular branch of public instruction; while, on the contrary, laymen, who live, move, and have their being in the thick and throng of temporal affairs, are better qualified for this duty. Moreover, from the overwhelming importance attached by the clergy to eternity in comparison with time, they would be under a constant temptation, often unperceived by themselves, unduly to subordinate Secular to Spiritual instruction. While, therefore, they are naturally indicated as the proper directors of the Religious branch of education, regard to the public welfare leads us to deprecate the consignment of the Secular branch to their administration.[1]

Their relation to certain doctrines.

Most churches and religious associations avowedly constitute belief in certain religious doctrines, the chief importance of which is their efficacy as means for securing happiness in a future life, as the indispensable condition on which they will teach that knowledge which relates to this world alone. But, as many individuals differ regarding these points, the condition of believing them excludes thousands from the schools, while the State cannot afford to allow any of its children to be barred out from Secular instruction. This is one reason why the State should be entrusted with the charge of Secular education for the benefit of all.

Dogmas made paramount to education.

Again, certain sects regard belief in the dogmas accredited by *them* as the only stable foundation, not only for Religious, but for Secular education; and, on this account, insist on rendering the teaching of their own dogmas paramount to all other instruction; and not only so, but, proceeding on the same ground, they claim also the exclusive control of schools. If their doctrines actually formed the only sound basis of Secular education, their pretensions would be irresistible. But there is an important error in this assumption, because, as already maintained,[2] there is no practical precept in the Old or New Testament relating to human conduct in this life, which is not contained also in the book of nature, and enforced by the natural order of Providence; and I repeat that it is their conformity to, and enforcement by, nature, which really give to Scriptural precepts their practical efficacy. Very few sects recognise this important truth, and we look in vain, in most of their schools, for an avowed, clear, and systematic teaching of the order of nature on which temporal posperity depends, as part of Divine revelation for the guidance of human conduct. If the truth and efficacy of all the precepts delivered by Jesus Christ, relating to those portions of human conduct in which society is directly interested, depended exclusively on our believing certain views of his character and work, these sects would have reason on their side; but, on the other hand, if the practical efficacy of these precepts depends on their conformity to the constitution and order of nature, and not on our belief or disbelief in certain interpretations of Scripture, the case is altered, and it becomes pure tyranny in sectarian men to deny instruction in the temporal order of providence to children whose parents do not embrace their doctrinal views in relation to eternity.

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[1] *Westminster Review* for July 1852; article on Secular Education.

[2] See chapter on the "Training of the Moral and Religious Faculties through Science," p. 123; especially p. 155.

Education should be based on nature.

They will probably reply, that they leave parents who do not approve of these doctrines to open schools for their children on their own principles. This, however, is just one of the evils which the advocates of State Education desire to avoid. The powers of nature are paramount active agents, from the influence of which neither prince nor peasant can escape; and hence God's natural laws relative to this world are equally applicable to all sects and to all nations, in all times, and they are expounded as such in the Bible. By adopting them as the basis of general education, the State may succeed in having *all* its people trained *in one set of practical principles*, resting on the common basis of the order of nature, and, therefore, admitting of unanimity and co-operation. While each sect founds its Secular instruction on the basis of its own interpretations of Scripture, this advantage cannot be obtained, and, in consequence, not only is society rent by religious dissensions, but its power of co-operation for practical improvement is greatly paralyzed. We see the result of this state of things before us at the present time. While discordant sects dispute whose doctrines shall form the basis of Secular education, many of the people are allowed to grow up in heathen ignorance, and too many of those who are educated are fierce partisans of peculiar dogmas, contemning and reviling all propositions to teach the order of nature, as rank infidelity! Our boasted freedom of religious opinion is, and must necessarily continue to be, a mockery, while each sect is striving for supremacy, and there is no common arena in which all can meet and recognise one God, and one order of nature. This, therefore, appears to me to be another reason for committing Secular education to the charge of the State.

Nature does not distinguish between sects.

I ask, Do the laws of nature, which regulate seasons, soils, and manures, and the processes of husbandry, recognise any distinction between Roman Catholic and Protestant, Established Churchman and Free Churchman, Episcopalian and Presbyterian? Do the laws of nature, on which the success of the mechanic depends,

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[1] Remarks on National Education, p. 17.

recognise such distinctions? Do the laws of health recognise them? Do the laws of morality, of trade, of courtesy, of good neighbourhood, recognise them? To every one of these questions, the unhesitating answer is, No!

Education should not be based on sectarian differences.

Why, then, should the teaching of all those great and important elements of instruction be denied to our perishing people,—perishing through ignorance, and falling into the mental degradation and incapacity which Providence has rendered its inseparable accompaniment,—unless they agree to learn the points of doctrine in which the Protestant differs from the Catholic, the points of form in Church government in which the Episcopalian differs from the Presbyterian, the points of government in which the Free Church differs from the Established Church? These differences are infinitesimally small, compared with the grand, world-embracing, practical truths in which all are agreed. And only one reason can be given why the differences are magnified into such portentous dimensions, and the points of agreement diminished into almost imperceptible space. The power, the consequence, the emolument, the religious, social, and political influence of the few, but active, enterprising, and ambitious men who constitute the leaders of the sects, depend on the importance attached by their followers to the differences. If the great body of their followers viewed the differences as matters of small account, and were ready to recognise as a brother every man who embraced the views in which all are agreed, these great leaders would instantly fall from their high places of authority and power. How long will the people linger in darkness, not discerning their true interest? So long will the progress of the many, in intelligence, religion and virtue, be sacrificed to the ambition of the few.

The relation of the people to the clergy.

Let us, however, do justice to these men. With the ambition, there is often mixed up a certain amount of piety, benevolence, Christian zeal, and intellectual accomplishment, all of which are sincerely devoted to promote the interests of the sect, and by which great good is accomplished. They have done, and are doing, good service to the State; but the people have advanced beyond the condition of pupilage in which sectarian guidance is necessary. They are now prepared for emancipation; and the ground on which I ascribe to their leaders ambition and the love of power, as strong influences pervading their minds, is the extreme reluctance which they show to this emancipation, and the unreasonable, disproportionate importance which they ascribe to the points of difference. These effect their own interests much more closely than they do those of their flocks.

The leaders live, move, and have their being in the differences; while the people actually live, move, and have their being in the points in which all are agreed. Yet the leaders are blind to this fact,—a blindness which I can ascribe to no cause but the ambition to lead and wield power, which, probably unknown to themselves, exerts an influence over their perceptions, so great that they cannot discern the true value of that universal Christianity which is recognised by all, and which, in the practical affairs of life, is actually the guide of all.

I can compare the proposal to found education on the differences of the sects (for they will not allow it to rest on the doctrines on which all are agreed) only to the demand that, when we have a comfortable three-legged stool to sit on, we shall pull out two legs, and balance ourselves on the third.[1]

The question illustrated by reference to Mohammedanism.

The question at issue may be illustrated thus: Suppose you and a sectarian were in Constantinople, and that you saw the priests there educating zealously in Mohammedanism, but leaving Christian, Jew, and destitute children wholly uninstructed; and you should say to the sectarian, "Let us collect money which will pay for 25 school-rooms, and let us find 25 enlightened young men who will teach these neglected children." Would he hold it a proper and satisfactory answer to say, "Look at these Mohammedan schools; they may go there"? He would at once say, "No; *they* teach religious error, and we cannot allow them to enter them. Small as the money is, and few as the 25 teachers are, let us employ them; they will *rescue* some from vice and ignorance." Now the Roman Catholics, Jews, Unitarians, and infidels would as soon send their children to a Mohammedan's school as to the sectarian's; and this for the same reason that the sectarian would not send the Christian children of Constantinople to the Mussalman priest's school—they regard *his* doctrine as *error*. The Mussulman might vaunt over him, on exactly the same grounds as he exults in his own large sums and numbers over you. The Secular educationists have never denied the zeal and munificence with which the religious sects labour to instruct every child whose parents will enlist it into the sect: but they deprecate this system, because the teaching is directed mainly to subjects and doctrines that are calculated to support the sect; and the sects quarrel so incessantly and so virulently, that this is an education to strife and not to peace and good-will. In the Secular Schools, the things taught are calculated to promote the welfare of the child as a citizen of the world, by teaching him the things indispensable to be done, to enable him to lead a quiet, virtuous, and useful life.[1] His welfare in the next world is committed to his parents, or the clergymen approved of by them; and it is held that it is the special duty of the clergyman, and not that of the schoolmaster, to impart *that* instruction.[2]

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[1] Speech on National Education, in Aberdeen, in 1851; from the *Aberdeen Herald*.

State endowment of inconsistent dogmas immoral.

It is a great evil to the nation that our Whig leaders have so little faith in the power of a right principle to vindicate and establish itself. If Lord John Russell could see that the endowment of inconsistent dogmas in schools is *immoral*, and cannot, if a moral God governs the world, prosper; that, on the contrary, the endowment of sound Secular education, in other words, a knowledge of God's order of creation and providence, is *highly moral*: he would face all earthly powers in support of the latter, assured that the right will vindicate its own might, in the long run; and he would shrink from the former, as from a house whose foundations are undermined, whose walls totter, and whose timbers are rotten.[3]

2. SHOULD NATIONAL EDUCATION BE CARRIED ON BY VOLUNTARY EFFORTS?[4]

If, then, it is objectionable in principle, and impossible in practice, to accomplish the Secular education of the whole people by means of churches and the clergy, the question occurs, To whom shall the task be committed?

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[1] George Combe refers to the Secular Schools founded by himself and his friends, and to the subjects which were taught there (described chap. vii. p. 201), and which he wished taught in all National schools.

[2] Letter of 24th November, 1853, to Mr James M'Clelland, regarding whom see p. 220.

[3] Letter to Sir James Clark, of April 14, 1847. See "Life," by Charles Gibbon, vol. ii. p. 238.

[4] The fullest and strongest exposition of a Voluntary system of education is contained in what are known as the Crosby Hall Lectures, delivered in Manchester in 1850 (see p. 239); also, in "Letters on State Education," by Edward Baines (London: Simpkin, Marshall, & Co.); and in Dr Hamilton's "Institutions of Popular Education" (London: Hamilton, Adams & Co., 1845, —all written at that period of controversy on the subject.

Objections to Voluntary schools:

Should we leave the people to depend on Adventure schools, and schools instituted and maintained by Voluntary associations? The objections to Adventure schools are: first, that when they are instituted for the lowest class of the people, they will never remunerate the teachers, and, therefore, cannot continue to exist; and, secondly, that the teachers who will attempt to establish them will be men of slender expectations, and equally slender accomplishments, and, therefore, incapable of giving the kind of instruction which the people need. When we speak of educating the people, we should think chiefly of the lowest class; for all above them are capable of doing something for themselves: and, moreover, we should keep constantly in view, that the education wanted is one which shall impart not only real, useful, practical *knowledge*, but ardour to the Moral Emotions, and vigour to the Understanding. We must aim at strengthening the minds of this class, so as to enable them to cope with the difficulties of life, which beset them more severely than any other order of the community.

Voluntary schools chiefly sectarian;

In regard to schools supported by Voluntary associations, we appeal to every practical observer, whether the leading motives of the members of such bodies have not been religious? We do not state this as an objection to the individuals comprising such associations, or as implying disrespect to the principle of action; but simply to call attention to the fact that their *leading* aim was to impart Religious, and not *Secular*, instruction. They have generally stopped short at Reading, Writing, and Arithmetic, and the Catechism or Bible, and left all the natural laws of Social Well-being untaught. The schools referred to have been the appendages of churches, or the recruiting stations of chapels; and, in their addresses, they have dwelt largely on the spiritual benefits they were conferring on the pupils whom they educated. Let them have their meed of praise, and, by all means, let them continue their benevolent exertions; but let them not deceive themselves, and imagine, as hitherto they have too often done, that, in communicating Spiritual instruction, they are conveying, at the same time, that Secular knowledge which is indispensable to terrestrial well-being. We have no hope that the excellent persons who have spent their lives in conducting these schools on religious principles will ever become thoroughly conscious of this great error, in omitting, from their curriculum, the whole counsel of God as revealed in the constitution and laws of the material world.

Before, therefore, we can hope for an adequate supply of schools

And insufficient for national needs.

for the lowest class of the people, founded on truly practical principles, and supported by voluntary associations of the rich, we must effect an entire change in the views and convictions of the middle and upper classes themselves; and half a century may be needed for accomplishing this purpose. We do not, therefore, enter farther into the merits of the scheme for educating the people by Voluntary efforts; nor is it necessary to do so, since its inadequacy to realise the object in view has been abundantly demonstrated, and it has now only a few, although these are very earnest and respectable, adherents.[1]

The true nature of Government right to educate:

It is often argued, however, that the Voluntary efforts of the individual members of society afford a better means for the supply of education for the whole people, than any Compulsory arrangements of the State; and hence it is denied that the State has a right to educate its people.

It must be approved by the nation;

There is a practical fallacy, however, in the manner in which this question is generally submitted to our consideration. In every free country, the State is merely the representative of the general power (physical, moral, and intellectual) of the country. It is not a distinct and independent being, that can exist and act in spite of the will of its members. Any system of military defence, of police, of law, and also of *education*, which the State can establish and maintain in this country, must be approved of by the intelligence of the empire.

It can do the work more efficiently.

Nobody contends that the Government has a right, despite of the will of the people, to seize on Public Education. All that is maintained is, that the Government may do the work better than individuals; and our security against the abuse, by Government, of its delegated powers lies in the control over the conduct of Parliament and the executive, which the individual members of the community are capable of exercising, through the elections and the press. We do not leave the defence of the country, and the police of our great towns, to the voluntary administration of individuals; because, the majority of society is agreed that these objects can be better accomplished by committing them to the State. And the case will be the same in regard to education. Its direction cannot be assumed by the Government until the majority of the public shall have become satisfied that it is best fitted to conduct the operations. The capricious or negligent administration of the means of public defence, or of police, would endanger the welfare, not only of those who erected themselves into the voluntary managers of them, but of those who differed from their views, and considered their course of action unwise and detrimental; and it is on this principle alone that Parliament gives, to the executive, the right to take these affairs into its own hands. In like manner, whenever the majority of society shall become satisfied that individual teachers, sects, and incorporations, have so neglected or mismanaged public education as to endanger the welfare of the State, they will (without limiting the right of individual action in so far as this is compatible with public safety) provide public institutions for the better accomplishment of this important end.

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[1] *Westminster Review* for July 1852, p. 20.

Government interference necessary.

Has such a case actually occurred? In answering this question, it is necessary only to look at the mental condition of the inhabitants of these islands to discover that education has hitherto been grievously neglected and mismanaged. The extent of ignorance, vice, helpless incapacity, crime, and suffering which abound, and which are more or less referrible to the low physical, moral, intellectual, and religious training and instruction of the people, is a point of too painful certainty to be disputed. This fact itself is sufficient to warrant men of reflection in requesting and empowering the State to try whether it cannot manage education better.

The State has special advantages for educating.

But other and solid reasons may be discovered for the failure of the voluntary efforts which have hitherto been made for the education of the people—reasons which may tend to justify us in committing it in future to the Government. The kind of instruction which it is the direct interest of society to communicate is that which relates to God's laws and mode of administration of man's temporal condition. The statesman placed in an elevated position, and entrusted with the welfare of all classes, sects, and individuals, has natural advantages for discovering what these laws are, for appreciating their social importance, and for applying them, which no private individual, sect, or class, can enjoy. He is in a position to discern, with a keener eye and a surer sagacity, what instruction is equally beneficial to all, than the man in the crowd, surrounded by objects which contract his vision and invaded by interests which bias his judgment. I say that, *cæteris paribus*, the statesman is better able than the individual citizen to direct beneficially this complicated and difficult branch of the public interest. Besides, his ear is open at all times to the admonition of individual wisdom, and his conduct is subject to the unlimited control of the parliamentary constituencies.[1]

The social effects of past voluntary education.

We are told, however, by some able opponents of the educational scheme introduced by the Orders of Council,[2] that Government has no right to interfere with the Secular instruction of the people, and that voluntary effort is adequate to accomplish all that is needed for the public welfare. I have endeavoured to show that Government is not only entitled, but bound, to enable the people, by legislative aid, to organise their own wealth and intelligence for the establishment and maintenance of schools for universal instruction; and I now beg to add, that experience shows that legislative aid far excels voluntary effort in this good work. England [1857] has been left to voluntary effort for the education of her people from the foundation of her institutions, and what has been the result? Mr Horace Mann, in his "Educational Tour," says: "England is the only one among the nations of Europe, conspicuous for its civilisation and resources, which has not, and never has had, any system for the education of its people. *And it is the country where, incomparably beyond any other, the greatest and most appalling social contrast exists; where, in comparison with the intelligence, wealth, and refinement of what are called the higher classes, there is the most ignorance, poverty, and crime among the lower!* Owing to the inherent vice and selfishness of their system, or their no-system, there is no country in which so little is effected, compared with their expenditure of means; and what is done only tends to separate the different classes of society more and more widely from each other."

It is as necessary to provide for mental destitution as for physical.

There is a great difference between the influence of the voluntary principle when applied to the support of churches, and of schools for the poor. The main object of the church is to provide means for securing the eternal salvation of the contributor and his family—a most momentous consideration to every reflecting man. It involves the selfish principles of his nature, as well as his affections, and his sense of religious duty. The school for the poor, on the other hand, addresses chiefly his Moral and Religious Sentiments, leaving his self-interest far in the rear. Experience shows that these emotions do not suffice to induce the rich to provide sufficiently for the physical wants of the poor, and, in consequence, Parliament has enacted poor-laws. Why, then, should we rely on them for providing for a not less clamant mental destitution?[1]

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[1] National Education, pp. 14–16.

[2] This refers to the Minutes of 1846, and to Parliamentary educational action in subsequent years.

3. NATIONAL EDUCATION SHOULD BE CARRIED ON BY GOVERNMENT.

The need of a Government system traced to its origin:

The public appear to be now nearly unanimous that *the people should be educated;* but considerable differences of opinion exist as to *who* should be charged with the duty of educating them—the State or individuals.[2] To convey my views distinctly on these points, I find it advisable to begin with the very elements of the subject.

The origin and objects of Society.

Let us consider *Society*, and its origin and objects. I regard society as the direct offspring of the inherent faculties of man. Some species of animals are gregarious, that is to say, have received, from the God of nature, certain feelings which render the presence of their kind agreeable to them; and, to this category, belongs man. Many of our faculties have intelligent beings for their direct objects; and all of them are adapted to a condition of social life. Not only so, but also the grand outlines of the social state of man are determined by the fiat of the Creator. Individuals differ *naturally* in bodily strength and in mental energy; and, in these differences, a foundation is laid for diversities of social rank and condition—for the existence of the rich and the poor, of the governing and the governed. In order correctly to understand human nature, therefore, we must regard man as an *individual* being, seeking his happiness in the gratification of his faculties; but, high in the list of these, we must place his Social Powers, which are as certainly inherent parts of his mental constitution as the most important of his Selfish Feelings.

The origin and functions of Government.

Government springs from the Social Faculties. Living in the social state necessarily implies, that there are interests and duties common to all the members of the tribe. Gregarious animals place sentinels to warn the herd or flock of dangers, and choose leaders to guide them. Among men, the ruling power, in its proper form, consists merely of certain members of the associated mass selected by the rest to attend to the common interests of the whole, and to enforce the reciprocal duties incumbent on the individual and the community. General consent of the members selects the Rulers, and lends them the power of the social body to execute their functions. History tells us, indeed, that, in many states, strong and energetic individuals have constituted themselves masters, and transmitted their power to their descendants, irrespective of the will of the community; whence notions have grown up of the right to govern being inherent in certain families, independently of the will of the people: but these were usurpations disavowed by reason, and such claims are not now made by the rulers of any constitutional state, and certainly not by the government of England.

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[1] Science and Religion, p. 276.

[2] Written in 1846, the year of the famous Minutes of the Committee of Council on Education; the 5th edition was issued in 1848, the year of the French Revolution, and of the vigour and excitement on all subjects roused by that great event, and not least on Education.

The true nature of individual rights: In a community;

In determining what are the rights of individuals, and what the powers of Government, our best guide is still the nature of man. Man subsists necessarily as an *individual.* He has received from his Maker certain powers of action and enjoyment, and been placed in a world adapted to his constitution. He has a right, therefore, derived directly from God (who called him into existence, and provided the world for his reception), to the full enjoyment of all his powers and capacities, but under two restrictions: 1*st*, that he shall not transgress the laws which Divine wisdom has established, in his own and in external nature, for their regulation; and, 2*dly*, that he shall not convert his individual enjoyments into sources of annoyance to his fellow-men, who, from the necessity of his and their being, must live with him in society. God, in his government of the world, enforces the first restriction, by punishing the individual with loss of health for abuse of his corporeal functions, and by misfortune and misery for neglect or abuse of his mental powers. The *duty* and the *right* of Government is to enforce the second restriction, viz., to see that the individual, in pursuing his own happiness, does not invade that of his neighbours.

In absolute solitude.

These premises enable us to draw certain conclusions regarding the right of our rulers to interfere in the education of the people. In the first place, it follows from them that, if any man chooses to renounce all connection with and dependence on society,—to go forth from the haunts of men, and neither live among them, accept their aid, nor tender them his contributions, physical or mental,—he has an undoubted right, so far as society is concerned, to indulge *all* his faculties in his own way, because he commits no offence against society, and causes it no injury. He commits, indeed, a great offence against his own nature, which the Creator expressly designed for social life; but nature herself, without the interference of man as an avenger, has provided ample punishment for that offence, by the deterioration of his social nature, and the deprivation of all social enjoyments, consequent on solitude. Betake himself to what solitude he will, he cannot escape out of the presence of God, or withdraw himself from the influence of *His* laws, which are woven into the texture of his body and mind, and inscribed in every breath of air, and every foot of ground. By their means, the Creator will inflict on him the precise kind and degree of punishment which his conduct merits, and which will best serve to recall him to a due estimate of the privileges which he contemns.

A man's duties to Society;

But, when an individual prefers to avail himself of the advantages of living in society, of the physical protection which other men's skill and courage afford, of the social pleasures which their intelligence and attainments present, and, above all, when he claims their sympathy, support, and relief in sickness and in old age—which every man living in society virtually does: he becomes bound to perform his duty to it in return; and society acquires a *right* to enforce the performance of that duty, as the fundamental condition on which it allows him to reap the benefit of its arrangements and institutions.

(1.) To preserve physical health.

What, then, are the duties which the individual owes to society? His first duty, in compensation for the advantages it confers on him, is obviously to acquire bodily habits calculated, according to the laws of organisation, which neither he nor society can alter, to preserve himself in health, that he may be fitted for his allotted sphere of action, and may avoid diffusing disease by infection around him. It is on this principle that society has the right to enforce the ordinary regulations of police in towns. It ordains every citizen to put forth from his dwelling all refuse and noxious substances, and employs men to collect and carry them away. This is not done in the country, because there, individuals who neglect this duty, injure only themselves and their domestic dependents. The same principle will authorise the enforcement of still higher hygienic regulations in towns; and, in point of fact, the statute 9th and 10th Victoria, c. 96, recently passed, authorises the magistrates of towns, on receiving a certificate signed by two duly qualified medical practitioners, "of the filthy and unwholesome condition of any dwelling-house or other building," to *compel* the person complained of to abate the nuisance within two days.

But I may go farther in the same direction. The individual who claims the benefits afforded by an advanced and intelligent state of

(2.) To qualify himself for social duties.

society, is bound to qualify himself, according to the endowments bestowed on him by Providence, for acting well his part in that society. In a society which is moral, he has no right to continue publicly immoral; because this is not only offensive, but directly injurious to his fellow-men: he is not entitled to remain ignorant and untrained; because, in that condition, he is incapable of performing his due part in the grand social evolutions, the beneficial results of which he claims a right to share.

The only conditions of refusing to have his children educated.

Before he can consistently deny the right of society to train and educate his children, he must show his own title to make the following announcement, viz.,—I decline to undergo the fatigue and discipline necessary to render my brain active, in order to fit myself for skilful labour, and for applying my labour to the best advantage; I decline to learn to read and write; I decline to be instructed in, or to conform my conduct to, those conditions in the physical and moral world, which, by the ordination of God, are productive of prosperity and happiness; and I decline to regulate my conduct by what you call the Laws of Morality and reason: all this I decline, because I am a free and independent man, and because it would be irksome to me to submit to such training, instruction, and restraint. Nevertheless, I claim the right to throw myself, with all my incapacity undiminished, all my ignorance unilluminated, and all my passions unregulated and untamed, upon the bosom of society. I insist, that its members who *have* cultivated *their* faculties, and reaped the natural rewards of that cultivation, in the possession of morality, intelligence, and wealth, shall bear the burden of my incapacity, of my recklessness, and of my follies; that they shall minister to me when sick, and feed me when my unskilled labour, in competition with their skilled labour, does not suffice to supply me with the necessaries of life; and that they shall provide for my wife and children when, through ignorance and vice, I sink into a premature grave.

The right of Society to educate its members.

This embodies, not a rhetorical, but a *literal* statement of the demand which the untrained and uneducated labourer, who denies the right of society to insist that himself and his children be trained and educated, makes on his fellow-men; and I leave those to defend it who abet him in that denial. The man who claims the benefit of a poor-law, actually demands from society all that I have now mentioned; and, unquestionably, we are entitled to say to him,—Before you can legitimately claim ignorance as the sacred birthright of yourself and your offspring, you must show your emancipation from the laws of God, which connect want with incapacity, misfortune with ignorance, misery with immorality, and disease and premature death with habits of filth, sloth, and intemperance. If the man admits that he continues a subject of the Divine government (and, unless he be mad, he will not dispute this point), he cannot, with any show of reason, contest the right of society to train and instruct him and his children to that degree which shall render him and them moral and intelligent agents, fit to play their parts in the society of which they claim to be members.[1]

The principles of State interference with Industry;

It is now an established principle in Political Economy, that Government ought not to interfere with Industry. This maxim was highly necessary when governors were little acquainted with the natural laws which regulate the interests of society. Their enactments relating to trade were then generally failures, often doing much harm, and rarely accomplishing any good. But, if God actually governs the world by means of fixed, intelligible, and steadily operating natural laws, designedly adapted to serve as guides to human conduct; and if prosperity and enjoyment be attainable only by conforming our institutions and conduct to these laws: it seems reasonable to conclude that, the science of human nature being once clearly developed, our rulers might considerably hasten the attainment of beneficial results, by adding the constraining authority of human laws to enactments already instituted by the Creator. Natural laws do exist, and the Creator punishes if they be not obeyed. The evils of life are these punishments. Now, if the great body of intelligent men in any State saw clearly that a course of action pursued by the ill-informed of their fellow-subjects was the cause of continual suffering, not only to the evil-doers themselves, but to the community; it appears to me allowable, that they should stop its continuance by legislative enactment. If the majority of the middle classes resident in towns were to petition Parliament, at present, to order shops in general to be shut at eight o'clock, or even at an earlier hour, to allow time for the cultivation of the rational faculties of the men and women engaged in them, it would be no reprehensible stretch of power to give effect to the petition. It would lead to no evil, if the ignorant and avaricious were prevented by law from continuing ignorant, and forcing all their competitors in trade to resemble them in their defects. If the Creator have so

With social regulations;

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[1] National Education, pp. 6–9.

constituted the world that men may execute all necessary business and still have time to spare for the cultivation of their rational faculties, any enactment of the legislature calculated to facilitate the accomplishment of both ends would be beneficial and successful. It would be in accordance with nature, and, although the prejudiced and ignorant of the present generation might complain against it, its results would justify its adoption. This principle of interference would go much further: its only limits seem to me to be the boundaries of the real knowledge of nature; for so long as the legislature shall enact in conformity with nature, it will be successful. At present, ignorance is too extensive and prevalent to authorise Parliament to venture far.

And all other matters for the general good.

Parliamentary action on these principles.

Since the foregoing was written in 1833, the legislature has partially acted on the principles here advocated. It has limited the hours of labour in factories, enacted laws for enforcing drainage and other hygienic measures in towns, and it is now tending towards enactments to improve the education of the people. These, and other laws of a similar character, appear to me to be within the legitimate province of a representative legislature. The chief ground for hesitation is, that until the people become so far enlightened as to see the foundations of the enactments in nature, they may view them as officious and offensive interferences with their rights of private judgment and action, and resist them. But, if they be really conform to nature, they will not truly partake of this character, and increasing knowledge will reconcile the public mind to obedience. In point of fact, resistance will be in vain, because the order of Providence will proceed in sending suffering in various forms, as the natural consequences of disobedience to natural laws. Sooner or later, this fact will be discerned, and the futility of resistance will be acknowledged. It is no slavery to obey God. Man in vain strives with his Maker.[1]

Parliamentary inconsistency in legislation.

In Britain, we are still so deeply immersed in the barbarism of the dark ages, that the maxim is very generally admitted to be sound, that society has no right to compel its members to pay money for benevolent objects. It is regarded as a legitimate exercise of legislative power to levy taxes to maintain prisons and penal colonies for *punishing* offenders, but quite illegitimate to exact money to rescue the young from the temptations that lead to crime;

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[1] Popular Education, pp. 49, 50; 3d edition in 1848.

it is legitimate to levy taxes to maintain fleets and armies for the purpose of fighting the people of other states, but illegitimate to raise money to be applied in national education, which, by rendering our own people just, might avert the necessity for fighting altogether![1]

Education imperfect when regulated by men of wealth;

In the Voluntary system of education, the leading object is *not* to teach things that may conduce to the temporal well-being of the scholars. The practical men who pursue this world's wealth for their own sakes, are, with a few honourable exceptions, not great educators. They want cheap labour, and that degree of intelligence which shall enable the child to learn to practise some small department of skilled or unskilled labour with success. They will educate to this extent, but no farther.

And by churchmen.

The religious men, again, have the church or chapel constantly in view as their grand object. They desire to teach, first, the doctrines that may bind the conscience of the child to their own altar, and they will add only such Secular knowledge as, in their opinion, may be useful and compatible with this end.

The true education needed for a country;

But what is wanted is an education of the people as moral and intelligent, as well as labouring and religious, beings,—an education which shall aim at enabling them to deliver themselves, by progressive steps and in successive generations, from the filth and degradation, physical and moral, and the stolid ignorance and imbecility in which the majority of them now exist; and at elevating them into the condition of moral and religious judges of the natural causes of their own happiness or misery; and at infusing into them mental vigour sufficient to reach and maintain themselves in a state of well-being, by a cheerful and habitual compliance with the requirements of these causes. To realise such a scheme, the sectarian educator must be set aside; the worldly-minded accumulator of wealth must be enlightened and humanised; and the people must be raised to perceive the advantages, and urgently to desire the practical introduction of it.

The difficulty of securing it.

This is a gigantic task; but so was it a Herculean labour to abolish slavery, to emancipate the Roman Catholics, to procure Parliamentary Reform, and, lastly, Free Trade. But there were giants in philanthrophy and in intellectual acquirements in those days, triumphantly to perform these glorious acquirements; and there are still, I sincerely trust, great spirits walking this earth able and willing to do as much for the education of the people.

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[1] America, vol. i. p. 176.

Education should be regulated by the most intelligent.

I acknowledge that water can never, by its own motion, rise higher than its fountain head, and neither can education, by whatever machinery imparted, go beyond the intelligence of the educators. But it is possible to construct a water-course which shall waste the water, obstruct its flow, and prevent it from ever rising to the level of its source. So it is with education. Place it in the hands of men whose chief object is not to promote the temporal well-being of the people but attach them to a creed, and you throw obstructions in the path of the philanthropy and intelligence which would devote themselves to this end.[1]

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[1] Letter to Richard Cobden, of 11th October, 1852. See "Life," by Charles Gibbon, vol. ii. p. 315.

CHAPTER II.

THE RELATION TO RELIGION OF A NATIONAL SYSTEM OF EDUCATION UNDER GOVERNMENT.

1. THE RELATIONS BETWEEN RELIGION AND THEOLOGY—THE RELIGIOUS DIFFICULTY.

THE grand obstacle to the establishment of a National System of Education, supported by taxation, is the "Religious Difficulty." Let us inquire into its nature, and the objects of those who interpose it.

Definitions of terms: (1.) "Secular."

In discussions of this subject, three terms are in frequent use, which it is necessary clearly to understand. These are—"Secular Education," "Religion," and "Theology." The word "Secular," derived from *seculum*, an age, means things belonging to time as contradistinguished from eternity. It means things belonging to this world; and Secular Education, therefore, signifies instruction in things which exist in us and around us, in our present state of being, and by knowing which we may vastly increase our temporal prosperity and happiness, and avoid much temporal suffering. Secular things, or things of this world, are not the opposites or antagonists of the interests of eternity. They are a portion of them with which we are necessarily much concerned in this state of being, and as such I beg that you will understand them.[1]

(2.) "Religion"—emotional and universal.

The word "Religion" expresses a Sentiment, an emotion, or a state of feeling, and is distinct from Intellectual conception. The history of man in every age and country proves the innateness of the Religious Sentiment in his mind, though its intensity, like that of all his other emotions, is different in different individuals and nations. In some, it is so feeble that they are scarcely, if at all, conscious of its existence. In this respect, it resembles the love of music and the power of producing it. Some savage tribes make only a series of monotonous sounds, in measured time, by beating on a rude drum with a stick, and this they call music. The Scotch-

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[1] See page 257, for further remarks on the meaning and application of the term Secular; also letter on the subject, by Mr Williams, in the Appendix.

(2.) "Religion"—emotional and universal.

man invents a sweet but simple tune in which melody and time are combined, he weds it to immortal verse, and this is his music and song. The German combines melodious sounds in infinite variety, and with every possible interval of time, adapts string to string and instrument to instrument, until he produces bursts of melody and harmony that thrill the astonished listener. But there are individuals to whom all perception of melody is denied, and to whom the sweet breathings of the lute are mere monotonous sounds. To prove to such individuals that, in this respect, they form exceptions to the general nature of man, we point to the existence of musicians, musical instruments, orchestras, and music-halls, as evidence that a love of music exists, of which these are the external symbols. And thus it is with Religion. We point to priests, temples, churches, and vast congregations of worshippers, existing in every age and almost in every country, as the visible and tangible proofs of the existence of a Religious Emotion in man. There are individuals to whom this emotion is denied, and others in whom it is feeble; but these, as I have remarked, form exceptions to the common rule. In men in general, it is a strong, vivid, or intense emotion, and, from the grandeur of the objects to which it is naturally related, it assumes supremacy over all our other feelings. Such, then, is the Religious Emotion.

(3.) "Theology"—intellectual and variable;

Let us now inquire into Theology. "Theology" means the Intellectual ideas which we form concerning the Being to whom, or objects to which the devotional or Religious Emotion should be addressed, and it springs from the Intellectual faculties stimulated by that emotion; and here the difficulties of the subject begin. The ideas formed of the object to which our Religious Emotion should be directed bear necessarily a direct reference to the extent of our knowledge of the external world and of the human mind. The savage, a stranger to science, is unacquainted also with mind elevated and improved by knowledge; and the lines of Pope describe his religion—

> "Lo! the poor Indian, whose untutored mind
> Sees God in clouds or hears him in the wind."

This is his Theology. The half-civilised Hindoo and Mahometan know more of external nature and of the human mind, and they have invented Sacred Books describing God and His prophets, and purporting to reveal His will; but these, with portions of truth, c [illegible] umerable errors. The Christian nations are by far the

And determined by the state of civilisation.

most advanced in knowledge, on the face of the globe; and the Bible, which they acknowledge as the chief source of their information about God, is greatly superior to the so-called Sacred Books of the Hindoos and the Mahometans. But the Bible does not constitute the Theology of these nations. They have framed various systems of Theological doctrine for themselves, and although each refers to the Bible as the source of its own standards, yet their doctrines differ from each other, and each sect denounces those of its neighbours as fraught with more or fewer dangerous errors. The more barbarous and ignorant any nation was when its standards were framed, the more stern, harsh, and unprofitable is the Theology they contain, and *vice versâ*. Thus it appears that the Sentiment or emotion of reverence and devotion to a great and good Being is common to the savage, the Hindoo, the Mahometan, and the Christian, but that each of these races forms notions of the qualities and will of that Being corresponding to its own intellectual enlightenment—in other words, its Theology bears the stamp of its civilisation.

The difference between Religion and Theology that of warp and woof.

The difference between Religion and Theology may be aptly illustrated by comparing them to the warp and woof of a web. The weaver fixes in his loom, first, long threads stretching out directly from his own position, and these are called the warp. Then he puts thread upon a shuttle, which he ever and anon casts between the long threads, and these cross threads are called the woof. The web or cloth is composed of the two series of threads closely pressed together. Now, in our present problem, the native Sentiment of reverence and devotion may be likened to the warp. It is the foundation or first element of the web. The Theological ideas may be considered as the cross thread, or woof. As the shuttle adds the woof to the warp to make the cloth, the Intellect adds Theology, or particular notions about God, to the Emotion; and the two combined constitute what we commonly call Religion. The Hindoo Religion is the primitive pure emotion, with such intellectual ideas as the priests of the country have been able to weave into it. The Mahometan and Christian Religions may be described in similar terms; and thus it is that the composite web of reverential emotion and intellectual ideas which each nation has formed for itself is called its Religion. The compound nature of this web is not usually perceived by its votaries. The Hindoo regards his sacred web as altogether Pure Religion; and the Mahometan, and the Christian of whatever sect, do the same.

The nature of the "Religions" of the world.

The results of the joint action of the two elements.

The primitive Emotion, when energetic and excited, is so overpowering that it carries the whole mind captive. When it acts blindly, it dethrones reason, stifles conscience, and enlists every passion to vindicate the honour and glory of the Being whom it has been trained to reverence. When the woof of error has been added in infancy, and the web of superstition formed, every thread—that is to saÿ, every notion concerning God, and his priests, and man's duty to both—becomes sacred in the eyes of the devotee, and stirs the emotion into a glow of rapture if gratified, and of pain, accompanied by indignation and fury, if offended. In this state of mind, barbarous nations plunder and slay in honour and to the glory of their gods.

The "Religion" of Christendom;

In Christian nations, analogous phenomena appear. We all profess to draw our Religion from the Bible; but, in Scotland, one woof is woven into the warp; in England, another; in Ireland, a third; in Germany, a fourth; in Russia, a fifth; and so on.

Of Scotland;

In our own country, the woof consists of certain views of God, of human nature, and of man's state, duties, and destiny, embodied in the Shorter Catechism and the Confession of Faith. In our infancy, these are woven by our parents and clergy into the very core of our Religious Emotion, and the resulting texture is our Religion. The union is so intimate, and the web so firmly knit together, that most of us have no conception of anything being Religion, except this our own compound web of devotion and intellectual doctrine. The Doctrine is to us as sacred as the Emotion, and he who controverts it is regarded as the enemy of our Religion. In barbarous ages, Christian men, acting under this impression, burned individuals who controverted their interpretations of Scripture; and, in our own day, they calumniate them as infidels, and obstruct their social advancement. Nevertheless, the doctrine which they thus regard as unquestionably Divine is a mere human woof, composed of inferences drawn from particular texts of Scripture, by mortal men assembled at Westminster in the 17th century,—men fallible like ourselves, and many of them more ignorant, though its intimate union with our devotional emotion is apt to incapacitate our mind from so regarding it.

Of England;

We obtain direct and irresistible proof that such is the fact, by merely crossing the Border, or St George's Channel. In England, the woof is composed of the Liturgy and the Episcopalian Catechism. The Englishman, into whose devotional emotion the doctrines of these books have been woven from infancy, cannot conceive of anything but his own web of opinion being the True Religion. If ignorant and prejudiced, he regards the Scottish Theology with indifference, aversion, or contempt; and, in a similar state of mind, the Scotchman repays his contumely by treating English Theology in a corresponding spirit. When enlightened, although they differ in opinion, they regard each other with respect.

Of Ireland.

Cross the Channel, again, to Catholic Ireland, and there you find that the Pope and Councils have fashioned other standards of faith, and that the priests have woven them into the warp of the Irish mind, and this web constitutes its Religion.

Other elements woven into "Religion."

Nay, the clergy of different sects have woven notions about church government and ceremonies into the warp, and made these also appear portions of Religion; and men fight for and defend them, with as much zeal as if they were attributes of God.

The reason of religious strife.

You can now understand why it is that we are afflicted with such deadly strifes and hatred in the name of Religion. "The clouds that intercept the heavens from us, come not from the heavens, but from the earth." The thing we call Religion is a compound web; and when our neighbour shows us his fabric of religious opinion, and calls it Divine, we, into whose minds it has not been woven, survey it with the eye of reason, and pronounce it partly pure and partly spurious in its threads. Our neighbour's devotional feeling receives a rude shock; he becomes angry, and attacks our web of opinion in his turn, and treats it in a similar way. Neither of us, in general, is capable of examining closely and calmly the threads that constitute the woof of his own web, and hence discord is interminable.

Rational and Scientific education the cure for these evils.

How is this unhappy state of things to be brought to a close? Dr Duff, the missionary from the Church of Scotland to the Hindoos, wrote home that preaching Christianity had but little effect on that people. They opposed their Sacred Books to his, and their miracles to the Christian miracles, and were incapable of perceiving the difference between them. He said to the Church of Scotland—"Send me teachers of Natural Science to instruct these people in the order and laws of nature, to open their understandings to truth and falsehood, to things that are real and things that are fanciful, and to teach them to reason; and, after they are so instructed, I shall convert them." In other words, he wished for men to pick out the threads of superstition from their minds, and to substitute natural truth; and, when the web was so prepared, he would be able to add the woof of Christian doctrine. By a similar process, perhaps, we might be enabled to pick out some errors from our own webs, and form a fairer fabric of True Religion; for, that the doctrines of many of our Christian sects must include error is certain, seeing that they so widely differ in their interpretations of Scripture. Indeed, how can the woof be pure? The Roman Catholic web was begun almost under the Roman idolatry, and it was woven into its present texture amidst the barbarism of the Dark Ages. The Protestant faith was woven into a web or system three hundred years ago, amidst bloodshed and fire and devastation; and many minor webs have been formed in later times, taking their origin from the mental peculiarities of their makers, such as Swedenborg, or from the circumstances of the times.

The "Religious Difficulty" in education explained.

The nature of the "Religious Difficulty" which obstructs the progress of a comprehensive scheme of National Education will now be easily understood. There are vast bodies of clergy and laymen attached to particular woofs of Christian Theology or doctrine, which they conscientiously regard as the only forms of True Religion; and so intimately are these doctrines connected in their minds with the pure devotional Sentiment, that they regard desertion of them as deserting God. They are bent on promoting the universal diffusion of them as boons to the human race, and are offended and affronted by opposition. Not only so, but each denomination has expended large sums of money in building places of worship and school-houses in which to communicate their views to the old and to the young, as Divine truth. They all see that the school-house is the recruiting station for the chapel, and they, therefore, aim, as I have said, first, to benefit your children, by education; but, in the second place, to benefit themselves, by enlisting as many as possible of them under their own banners, in the certain expectation that, twenty years hence, those children will prove pillars and stays to their chapels.

What is praiseworthy and what blamable in it.

I do not blame them for their attachment to what they consider truth, and I admire and respect their zeal in endeavouring to diffuse it. Indeed, the deep interest and universal commotion that now exists in the United Kingdom on Religion are to me, in one view, subjects of rejoicing; for they indicate an awakening energy in the highest emotional faculties of man, the torpor of which, in the latter half of the last century, was fatal to moral progress. But I lament the blindness which prevents the leaders of the different sects from discovering that their own web of Theology is not necessarily the only True Religion, although, from the circumstances before explained, it is the truest with which they are acquainted.[1]

2. THEOLOGY SHOULD NOT BE TAUGHT IN NATIONAL SCHOOLS.

The two divisions of education requiring separation.

We divide Education into two branches:

First, Instruction in Religious truth, and training to act in conformity with it.

Secondly, Instruction in the objects and agencies of nature, and in their influence on temporal well-being.

The leading aim of Bible Religious instruction is, to communicate such principles of faith and practice as may ensure the salvation and happiness of an individual in a life to come. That of Secular instruction is, to impart such knowledge and habits of action as may conduce to well-being in the world in which we now live. We propose to disjoin these two branches, and to establish a separate school for each.[2]

What faculties should the State educate?

Has the State a right to educate all the faculties of man? We have already answered, that it has a right to train and educate every faculty to the extent to which its action is necessary to enable the individual to discharge his social duties, and no farther. It is entitled to train Veneration, for example, to respect and yield obedience to every Scriptural precept, and every natural law, which directly affect the welfare of the social body; but has it a right *to force* men to embrace and venerate any doctrine which has its issues only in a future state of existence? Society, such as we see it, does not exist beyond the grave. Therefore, only individuals in their individual capacities are concerned in matters of eternity; and on this subject, their birthright is entire freedom of judgment and opinion.

Religious teaching secured by voluntary agency.

The depth and magnitude of that interest is sufficient to secure an extent of teaching of this class of Religious doctrines up to the full demands of the faculties; but no amount, however unlimited, of such teaching, necessarily implies or secures instruction in temporal duties. Assuming that, during the last century, the

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[1] Speech delivered in Edinburgh, in 1851, on National Education; from the *Scotsman*.

[2] See also the Appendix, for an excellent exposition of this position, by Dr Andrew Combe, "On the Introduction of Religion into Common Schools."

[3] Article on Secular Education, in the *Westminster Review*, of July, 1852.

Roman Catholic clergy in Ireland have taught their people Religious truth sufficient to secure their eternal welfare, it is certain that they have not instructed and trained them, to an equal extent, in that knowledge of this world and its laws which produces prosperity and happiness. It is this latter species of knowledge which it is the right and the duty of the State to provide for the people, because it applies directly to interests falling under the management of the State, and the absence of it, as we now see and feel in regard to Ireland, cannot be compensated by purely Religious teaching. Ireland demonstrates to us that the want of instruction in the order of nature aggravates all natural calamities, and impairs all natural blessings, to the great damage, not only of the individuals whose training has been neglected, but of every member of the community who has sympathies to feel for human suffering, or a purse to provide for their removal.[1]

Secular should be provided by the State.

The State has nothing whatever to do with Theological education.

The question of National Education without a creed, on its true basis, is this: that a Civil Government has nothing whatever to do with educating its people in *a Religion*. The prevailing fallacy that *Morals and social order* are based *on Religion*, and have no other foundation, must be attacked and subverted before the proposition that Government has nothing to do with Religion can be logically maintained.; and there is not one statesman in a hundred who sees his way through the question. Logically, the argument is irresistible that Government is bound to lay the foundations, in the public mind, of *Morals and social order*. If these have no foundation except a Religious one, Religion must be taught as the basis of all sound education; but if Morals rest on one foundation, and religion on another, like Architecture and Music, you may cultivate Architecture to secure good buildings, while you leave Music to its votaries—in other words, teach Morals and leave Religion to the priests. If the public mind were convinced on this subject, there would be an end of the question.

Many religious men denounce the teaching of Science as "godless education." While they are thus nearly unanimous in practically

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[1] National Education, p. 14.

[2] Letter of 14th July 1846, to Mr James M'Clelland. See p. 220, regarding Mr M'Clelland's Educational Efforts and connexion with George Combe.

The effects of Sectarianism on Religion;

jecting the course of Providence in nature as a source of instruc- on, each places in the hands of the young its own Catechism of octrines, its Liturgy, its Confession of Faith, or its other articles of elief; and, with the most pertinacious assiduity, labours to imprint hese indelibly on the memory, and to imbed them in the affections f its pupils. Meanwhile, many of the sects denounce the Catechisms, iturgies, and Confessions of certain others as unsound, unscriptural, nd dangerous to the eternal welfare of the people. Here, then, is record unquestionably Divine, in so far as we read it rightly, uperseded and set aside for books of human compilation, denounced s unsound by large masses of the community.

On Education.

The effect of this on education is described by Mr Horace Mann,[1] in the following words:—"After the particular attention hich I gave to this subject (Religious Instruction) both in England nd Scotland, I can say, without any exception, that, in those chools where Religious creeds, and forms of faith, and modes of orship, were directly taught, I found the common doctrines and njunctions of Morality, and the meaning of the preceptive parts of he Gospel, to be much less taught and much less understood by the upils than in the same grade of schools and by the same classes f pupils with us," in Massachusetts, where the teaching of all ectarian doctrines in Common Schools is prohibited by law. Is not his sacrificing Christianity itself at the shrine of Sectarianism?

The sects must magnify their differences.

The elements of which a sect is composed are the points in which t differs from other sects; and its existence depends on the success nd assiduity with which it infuses a knowledge of and reverence or these into the minds of the young. It represents them as sub- ects of the utmost importance to their temporal and eternal welfare. In the estimation of its zealous leaders, they greatly surpass in ractical, as well as Religious importance, the order of nature. If ny sect were to cease investing its points of difference with the ighest reverence in the estimation of its pupils, and begin to nagnify the truth and utility of the doctrines in which all are greed, it would commit *felo de se*. Its dissolution and fusion into he general body of Christian believers would be inevitable and peedy. The more completely, therefore, the different sects obtain he command of education, the greater will be the obstacles to the ntroduction of the order of nature into schools.

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[1] "Report of an Educational Tour in Germany and Parts of Great Britain and Ireland," by Horace Mann, Esq.; with Preface and Notes, by W. B. Hodgson. (London: Simpkin, Marshall, & Co.)—(G. C.)

These not the essentials of Christianity;

The points in which all Christian sects are agreed *must* constitute the essential substance of Christianity; because it is on these that Christian men of all denominations act in the business and relations of life. Pious, honest, and benevolent men abound in them all; and this common excellence must spring from a common source. The points on which they differ, although forming the life-blood and bonds of union of sects, cannot constitute Christianity; because, if they did, the Christian religion would really have scarcely any practical form or substance. It would consist of abstract disquisitions, discernible only by microscopic eyes, and inapplicable to all beneficent ends. Who will say that the points of faith in which the Church of England differs from the Congregationalists, or the views of church government in which the Free Church differs from the Established Church of Scotland, or the Secession Church from the Free Church, or the Scotch Episcopalian Church from them all, are the essential elements of Christianity? And yet it is for the sake of maintaining these distinctions from generation to generation, and of transmitting, to the remotest posterity, the bitter contentions which have so frequently vexed the spirits and alloyed the happiness of this age, that we are called on to exclude instruction in the course of nature, as a guide to human conduct, from our schools; to reject a system of education founded on the points in which all are agreed; to prostrate the national mind beneath the car of sectarianism, and to allow it to be crushed and distorted by its unhallowed wheels!

And are detrimental to education.

Science destructive of sectarianism.

Practical Christianity, on the other hand, and the laws of nature, physical, organic, and moral, present the same instruction, and recommend the same line of action to all, and are, therefore, destructive of sectarianism. Hence the cry of Infidelity which all sects raise against them! Obedience to them is calculated to bind man to man, and nation to nation, by the ties of reciprocal interest as well as of affection and duty, and to bring all into communion with God. Our knowledge of them grows with the growth of Science, and their influence increases with the augmentation of the prosperity which obedience to their dictates yields.

The duty of scientific men to education.

Will not the men of Intellect and Science who see this to be the case assume courage, speak out, and help to stem the torrent of sectarianism which overflows the land? They have it in their power at this moment to do their country an invaluable service, for which she would one day rear monuments of gratitude to their names. Will they, through fear of a little temporary obloquy, desert the standard of truth, of God, and of the people? Let their own consciences answer the appeal, and let them act as their consciences dictate. Will no teachers arise, embued with knowledge of the order of nature, as unfolded in Science, and, with faith in its adaptation to the human faculties, communicate it, under the sanction of the Religious Sentiments, to the young, as a help to guide them through the thorny paths of life? Yes! Such teachers exist, and they lack only the countenance of the enlightened laity to follow the strong impulses of their affections and understandings, and accomplish this great improvement in Secular instruction.[1]

Sectarianism checks general intelligence and shackles clerical thought;

Moreover, under the sectarian system, not only is the advancing intelligence of the people shackled by the consecrated errors of the Dark Ages, but the most vigorous and profound thinkers among the clergy of all denominations are subdued and held in thraldom by their feebler brethren. The men of inferior endowments and intelligence take their stand on the accredited dogmas, which they cherish because they are in accordance with their own narrow and prejudiced perceptions; and they resist every liberal idea and study that has the most remote appearance of conflicting with their preconceived ideas. As they exert a great influence over a half-educated people, trained to regard their doctrines with holy reverence, the more powerful minds too generally retire from the field, and leave to them an undisputed sway.

And hinders the best interests of society.

The best interests of society suffer from this unhappy state of things; whereas, if nature were taught as the harmonious ally of a sounder interpretation of Christianity, the men endowed with the profoundest intellects and the purest and most elevated emotions, would lead the general mind, and we should constantly advance. In the present time, the leaders of the Calvinistic sects are strenuously exerting themselves to bring back the public sentiment to the opinions of the middle of the seventeenth century; and if they do not succeed, it is Science alone which will prevent this consummation of their labours.[2]

The struggle between the sects to obtain possession of the schools commenced with the Reformation. Luther, Calvin, and Knox urged education as the only means of making good their conquests from Catholicism. They saw that the school was an admirable

This refers to the Secular Schools then in operation, an account of which is given chap. vii. p. 201.

[2] Science and Religion, pp. 271–5.

Sectarian struggles for the conduct of education.

place for effectively weaving the Protestant woof into young minds, and, by the most praiseworthy efforts, they accomplished this great work. But Ignatius Loyola, the founder of the Jesuits, did the same service to Catholicism. He and his followers instituted Roman Catholic schools, and they speedily wove such a woof of faith into the young minds of the flocks left to them after the Reformation, that Catholicism has not only been impregnable ever since, but appears actually to be gaining on Protestantism. Mr Macaulay, in the *Edinburgh Review*, remarks that, since the age of Luther, Protestantism, relatively to Catholicism, has not increased; and that, whatever since that time has been gained by Christianity, has been acquired by Roman Catholicism.

Their effects on education and progress;

How do the interests of laymen fare under these conflicts of contending sects? They wither and decay. The Theology itself cramps the understanding, and lowers the moral courage of the nation. These contests not only present obstacles to the foundation of schools and benevolent societies, but block up the doors of our universities, and of as many of our existing seminaries as the sects are able to command. Sentinels, with theological and ecclesiastical tests in their hands, stand at the portals of our colleges and parish schools, and of our charitable foundations for education, and beckon back all who will not consent to receive them as embodiments of Divine truth. The consequences, I repeat, are that education, and with it the moral and intellectual progress of the nation, are obstructed. We are brought to a dead lock, and unless the people declare their resolution to be free, I see no means of escape.

Shown in different countries;

Survey the histories of nations, and you will find that they all tell one tale. Wherever the education of the people has been chiefly under clerical control, there Religious doctrines have been assiduously taught, and the knowledge of God's creation, and the laws by which it is administered, has, generally speaking, been omitted; the people are ignorant and superstitious, and have made small progress in material well-being. This is the character of the instruction given in Southern Italy, Spain, and Portugal, in some of the rural districts of England, and, until lately, in Catholic Ireland. The Highlands and Western Islands of Scotland afford additional examples. Intellectual torpor and material degradation reign in these countries, hand in hand with undisputed religious creeds.

But Germany and the United States of North America present

And contrasted with others having Secular education.

examples of nations who are educated by laymen in Secular knowledge, and by their clergy in religious creeds; and there intellectual activity and material well-being are far more general among the people than in the same class even in Great Britain. Within thirty years, under universal Secular education, Germany has made greater advances in civilisation, in all its branches, than it had done for a century before under purely clerical instruction. Nay, so palpable did the evil of a predominant clerical influence in education become to the Swiss, that, in 1847, the Protestant cantons made actual war on the Roman Catholic cantons, and expelled the Jesuits, because they had engrossed, and turned to their own purposes, the education of the young, and were constantly, through this means, extending their influence.

The results of Scotch sectarianism: In society;

In these countries, far greater religious freedom reigns than in Scotland. There, a man who is moral may profess what religion he pleases; here, the shopkeeper is forsaken by his customers if he is reputed unsound in his faith; the orthodox Churchman will not stand on the same platform, for educational objects, with the Unitarian; the Evangelical supporter of the Original Ragged School will not even enter the door of the United Industrial School,[1] because Roman Catholic and Protestant children are there instructed in Secular knowledge in the same classes. Nay, although the webs of faith of the Established Church, the Free Church, and the United Presbyterian Church, are actually woven from the same materials (the Westminster Confession and the Catechism), yet, because they are the products of different looms, and each has three or four threads of opinion about church-government in which it differs from the others; these few threads act like electrical elements of discord, and make the whole webs repel each other with fiery vehemence. Such a state of things, I say, brings dishonour on our country. It wastes, in paltry contests, the mental energy that should be applied in improving the moral and intellectual condition of the people; it stifles our emotions of benevolence and justice; consumes our substance, in building schools and chapels, which ruin previously existing establishments of a similar kind; and, worst of all, it renders us moral poltroons, for, so intense and active is sectarian hostility and so vindictive in its spirit, that thousands who see and deplore these evils are deterred from attempting to remove them.

They occasion more evil still. They prevent the development of the national mind. In our Universities, the professor of Anatomy

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[1] Schools established for the education of the very poor in Edinburgh.

And in the Universities.

will, for example, show the structure of the eye, and name it the organ of vision; and the professor of Natural Philosophy will describe the sun, and demonstrate the laws of the solar system. Or the anatomist will describe the cells and tissues, the air-tubes and blood-vessels, of the lungs; and the chemist will demonstrate the composition of the atmosphere. But there is no chair instituted to teach the relations between these different classes of objects, and the lessons which they read to man. Any instruction given about them is merely incidental. Now, the young student, when his attention is properly directed to these relations, discovers that, though the eye without light would be useless, yet the grand fountain of illumination is ninety millions of miles distant from this organ. Then the stupendous thought rushes into his mind, that an Intelligence which embraced both, which designed, adapted, and maintains both, must exist; and the devotional emotion glows with rapture in the contemplation of His greatness, His goodness, and His power. Or, again, the admirable adaptation of the air (with its seventy-eight parts of nitrogen, twenty-one of oxygen, and one of carbonic acid gas) to the lungs, bespeaks the presence of the same Divine Intelligence in the arrangements of our bodies and of the earth, and reads to us lessons of great practical utility in regard to ventilation, exercise, and the laws of health. Yet this teaching is not to be found, except incidentally, in our Universities. The Catechism and Confession of Faith are thrust between the external creation and its Author; we must draw our Theology from them; and small encouragement is given to us to gather threads of Divine texture from the magnificent stores of nature, and to weave them into the warp of our religious emotions. The standards of the Church, and they chiefly, must constitute the woof of our religious web; if we insert other threads, it must be at our peril and by stealth. In our schools, generally speaking, this teaching of the relation between nature and God, is nearly unknown; nay, it is frowned upon, is designated as infidel, and the Catechism is thrust into the reluctant hands of the schoolmaster to be taught in its place.

The consequent divorce between Religion and nature.

The two great questions in this discussion;

There are two questions wholly distinct, which are very generally confounded in this discussion:—"What shall I do to be saved?" is the first. This every man is at liberty, in the exercise of an unquestionable right, to judge of and answer for himself. The appropriate and legitimate object of the students of faith in every church, and of all clerical tendency, is to help each of us to form a sound opinion on this momentous point. But the other question, in which the working classes are also deeply interested, is—"What shall we do to provide wholesome food, comfortable raiment, pleasant dwellings, and the harmless luxuries of life, for our wives, our children, and ourselves?" Secular education, or instruction in God's works of creation and in the laws which he has imposed on them, which are the fountains of human well-being on earth, must be given Free in our Common Schools, before the people can rise to the dignity of intelligent administrators of this world, and cease to wage the hopeless war of competition with the steam-engine and the horse.[1]

Sectarian education cannot satisfy the whole people:

The best of all reasons, in our opinion, why Secular instruction should be separated from Religious instruction is, that it is *impossible*, in the present state of opinion, to unite them in a manner that will satisfy the *whole* people; or, what is practically the same thing, an overwhelming majority of them. And *this* is an indispensable condition in any efficient system of National Education.

From the differences of the churches;

In regard to the doctrines to be believed, and the conduct to be pursued as the means of securing salvation in the world to come, and also in regard to the form of church government sanctioned by Scripture; there exist great, and, at present, irreconcilable differences of opinion among men equally enlightened, benevolent, and sincere. Hence the conscientious Episcopalian declines to allow his children to be instructed in the religious standards of the Church of Scotland, while the Presbyterian objects to the instruction of his children in Episcopal tenets. The Roman Catholic protests against the doctrines and church government of both, as unauthorised by Scripture, and dangerous to the souls of men; while the Protestant sects denounce the Church of Rome as the promulgator of "soul destroying" errors. The practical question is,—How, while these and many other differences exist, is the Religious instruction of the *whole* people to be accomplished?

The multitude of neglected and vicious children who infest the streets and lanes of our large towns are the offspring of Roman Catholic, socialist, or other dissenting parents, who, although they may not frequent any place of public worship themselves, still cling to some form of faith, or of unbelief, which induces them to withhold their children from the religious teaching of the Church of England or of Scotland. We saw it lately asserted, on the

And the opposition of the vicious.

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[1] Speech in Edinburgh, in 1851, on National Education; from the *Scotsman*.

authority of Dr Strang, the Chamberlain of Glasgow, that, in that town, there are 80,000 persons of the Roman Catholic persuasion.[1] These, as a body, would as soon allow their children to be educated by the Jews as by the Church of Scotland. In point of fact, they have exactly the same repugnance to send their children to receive Religious instruction from the schoolmaster of the Established Church, as any evangelical Protestant would have to send his own children for doctrinal faith to the school of a Roman Catholic priest. The proposal, therefore, which has been made to extend the Religious teaching of the Church of Scotland as a means of giving Religious instruction to these children, and rescuing them from personal and social degradation, is preposterous; it is an indication of that blindness of understanding which ardent partisanship in Religion is so apt to induce.

Secular education necessary, not from sectarian differences;

Your correspondent says:—"The reason why people demand State-paid Secular instruction is, because it relates to matters in *which there is no difference of opinion*, whereas, in Religious teaching, the Presbyterian objects to pay for the education of the Episcopalian in doctrines which he considers it would be a misfortune for the youth of Scotland to imbibe; and the Protestant objects to be taxed for Roman Catholic schools, which he looks on as a machinery for the promulgation of error." There appears to me to be a partial fallacy in this representation. There is no subject of human knowledge, except the Mathematical Sciences, on which "there is no difference of opinion." Such differences exist, more or less, in all the sciences, even in those based on observation and induction; while, on such subjects as History, English Composition, and the English Language, differences abound. The real reason why it is proposed to include History, Languages, and the Sciences in National Education is, that these relate to the things of this life, that they can be brought to the direct test of observation and reason, and that a knowledge of them is necessary to a right ordering of human conduct in the present world. For example, experience shows that the laws of health affect equally men of all religious opinions; and hence it is important that children should be instructed in them.

But as relating to this life;

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[1] There are now (1878) fully 100,000 Roman Catholics in Glasgow.

[2] Article on Secular Education, in the *Westminster Review*, for July, 1852. An effort was made, in 1851, to secure a National system of education on Sectarian principles, which was strongly opposed by George Combe, p. 587.

[3] "A Secular Educationist," in *Scotsman* of November 22d, 1849.

The laws by which the creation and distribution of wealth are regulated apply equally to the enterprises of the Presbyterian, Episcopalian, and Roman Catholic; and hence the advantage of teaching these to all. It is not the circumstance of unanimity of opinion on these subjects that renders them proper for Secular schools, but that of their relation to human welfare in this life, and the possibility of testing their soundness by reason and experience. If they contain some truth, that truth bears directly on our temporal well-being, and, in so far as they are imperfect, they may be improved.

And having nothing to do with the other world.

On the other hand, Religious doctrines are objected to by me as subjects of National School instruction, because they relate chiefly to human interests in another world, over which earthly governments have no jurisdiction; and because they are believed to be of such momentous importance that no man should be allowed to dictate to his neighbour in regard to them, the more especially as the issue of his opinions cannot be tested by experience in this life. The very fact that the laws of mechanical and chemical action, of health, of Social Economy, and of common Morality, affect equally individuals of every religious persuasion, shows that these act independently of our religious beliefs; and it is a great contradiction to reason, and a certain impediment to human welfare, to withhold a knowledge of them from the people, unless they agree, at the same time, to be taught Presbyterianism, Episcopalianism, Roman Catholicism, or some other Religious doctrine. It would be as reasonable for the laity to insist that the education of the clergy in the things pertaining to faith should be based on Natural Science, and taught only by professors of Science; as for the clergy to urge, that the teaching of physical and physiological nature shall be based on Religious doctrines, and conducted only by men of certain Religious opinions. The blindness of many excellent laymen to the truth of this conclusion can, in my opinion, be accounted for only by the omission of scientific instruction in their own education, and by their imperfect appreciation of its importance; but the public mind is rapidly acquiring sounder views on this subject, and indications are not wanting that the advocates of Secular education will not long be overpowered by their present opponents.[1]

[1] From letter by George Combe, written 23d November 1849, and published in the *Scotsman* of 24th November, headed "What is Secular Instruction?" in reply to a letter signed "A Secular Educationist," criticising sharply the Williams Secular School and Phrenology, and speaking of "Bishop Combe" and "Dean Williams," written by a man who has since attained great literary eminence.

3. BY WHAT MEANS SHOULD RELIGION BE TAUGHT?

Education should be Religious and Secular.

The advocates of Secular education do not "object to Christian churches taking up the work of Education." The reverse proposition would be nearer the truth. They divide education into two branches: 1st, Instruction in Religious truth, and training to act in conformity with it; and 2nd, Instruction in natural objects and Natural Sciences (*i.e.*, the subjects of which the Physical and Moral Sciences and Natural Theology treat), and training to act in conformity with them. The leading aim of "Religious" instruction is, to communicate such principles of faith and practice as may insure the well-being of the individual in a life to come; and that of Secular instruction is, to impart such knowledge and habits of action as may conduce to well-being in the world in which we now live. By committing education to Churches, your Grace[1] apparently proposes to give both kinds of instruction by the same teacher, and in the same school, and to blend the two together. Assuming for the moment, although not granting, that this is desirable, I ask, Is it possible? To me it appears not to be so, if we are to establish schools for the children of the whole people, and not for a mere section of them.

Religious instruction should be given by the Churches;

The advocates of Secular education are not opponents of the Religious instruction of the people; but they are not blinded by sectarian zeal. If they were hostile to Religious education, they would shake hands with your Grace, and join in proposing to commit to *one* sect, no matter which, the duty of educating all in Religious faith. By this means, their irreligious end would be certain to be gained; because, in the present state of opinion, no sect could collect all the destitute children into its fold, not even if aided by Her Majesty's horse, foot, and artillery. Being sincere in their desire to furnish Religious instruction to the people, these advocates, therefore, propose to do so in a manner which is not a mockery, but practical and real. They suggest that Religious should be separated from Secular instruction, and that each sect should give Religious instruction to the children whom it claims as its own. If there be children deserted by their parents and guardians, claimed by no sect, and left destitute of all Religious guidance, there can be no objection to their being delivered over to the parish which maintains them for Religious training, as well as for food and raiment; but these do not constitute the mass of our degraded juvenile population.

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[1] The Duke of Argyle, in 1852.

Which should provide it for the debased.

It is in vain to urge as an objection, that ignorant and debased parents cannot be expected to give Religious instruction to their children. In urging this, you fight with a shadow, because Secular educationalists have never propounded such an idea as the objection assumes. Their fundamental proposition is, that, in order to induce the children of all sects to enter a school for SECULAR instruction, it is necessary to separate that school from the school in which we propose to teach Religious doctrines, about which sects differ in opinion. They urge, as earnestly as your Grace, the establishment of Religious Schools, but separate from the Secular, and managed, not by one sect, as you propose, nor by hostile sects, but by individuals belonging to each sect, who shall charge themselves with the Religious instruction of the young belonging to their own persuasion.

Why National schools should give Secular instruction.

Why do we propose to give such instruction in Secular schools as shall be acceptable to all sects? Because the order of God's Secular providence is the same for Jew and Gentile, Roman Catholic and Protestant, believer and unbeliever. The sun shines on them alike, ripens their corn by the same process, warms them by the same influence; and its retreat to the distant regions of the south leaves them all alike enveloped in winter's desolation. The atmosphere carries health or sickness, the storm destruction, and the fire warmth or torture, to all alike, according as they expose themselves, wisely or unwisely, to the action of the elements. The laws of social well-being, which determine the production and distribution of wealth, the destitution of some, and the riches of others, are the same to all. And Secular instruction means the communication of these and other natural things and agencies.[1]

The nature of the Secular instruction recommended.

I propose to erect schools to teach the children of all classes who choose to attend them, free of expense, the structure and functions of their own bodies; the structure and laws of physical nature, and the relation of man to these objects and laws; the facts of Social Economy; and, above all, the laws of Morality and Religion, and the indispensable necessity of our observing them, in order to attain prosperity: and we must train the young to act on this knowledge.

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[1] From letter of 21st January 1852, to the Duke of Argyle, in reply to a speech of the latter, delivered in Glasgow, on the "Church of Scotland Endowment Scheme," in which he criticised a lecture of George Combe's, "On the Comparative Influence of the Natural Sciences and the Shorter Catechism on the Civilization of Scotland"; also article on Secular Education, in *Westminster Review* for July, 1852.

[illegible]

[illegible]

[illegible] that we shall ever have [illegible] until the minds of the young [illegible] with every important practical [illegible] The real distinction would be into Natural and Supernatural; the age is not ready for this distinction, and, in want of a definition, I would hold Secular instruction to include all tru nature, all reputedly true histories of human events, a principles of Morality and Religion, necessary for the right o of practical conduct in the affairs of life.[3]

Lord John Russell, in a speech delivered by him in the H

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[1] Speech at Paisley, in 1851, on National Education, from the *North* *Daily Mail*.

[2] Letter to Mrs Whately. See "Life," by Charles Gibbon, vol. ii. p.

[3] "Life," by Charles Gibbon, vol. ii. p. 236.

Lord John Russell's opinion of the Religion of Secular Schools

Commons on the 4th April 1853, in introducing a scheme of National Education, is reported by *The Times* to have said: "The scheme" (of giving Secular instruction in schools and omitting sectarian Religion) "is developed by many of the writers on the subject, especially by Mr Combe, whose name, no doubt, will be well remembered by the House. What he holds out is this,—That very imperfect views are taken with respect to Religious subjects; that very often those rules which the Almighty has laid down for our conduct in this life, so far from being followed, are wilfully or blindly set at nought; and that it is the business of the schoolmaster to teach those laws of Social Economy and of Physiology by which the people of this kingdom may be better instructed in conducting themselves, so as to enable them to avoid that course of vice and misery into which too many of them fall. It will, however, be obvious to the House that this is a proposal different from what was the apparent proposal, as at first put forth, of the advocates of the Secular system. The proposal, as it stands nakedly in the first declaration of their views, amounts to this,—give exclusively Secular instruction in the schools, and leave Religion to be taught elsewhere by the ministers of Religion. The second view of the subject, however, is this,—There is a Natural Theology which should be taught in the schools, but Christianity should not be taught there. Now, that appears to me a view certainly more extensive, and undoubtedly far more dangerous, than that which the advocates of Secular education first set out with. My belief is that the people of this country acted with a right instinct, when, upon associating together and devoting their money for the purpose of education, they declared openly that there should be a Religious training in the schools, and that that Religious training should comprise all the great doctrines of Christianity."

Christianity not opposed by Secular educationists.

Lord John Russell commits an error, if he means that, while the advocates of a purely Secular education proposed that Christianity should be taught by the clergy, or by teachers authorised by them, in a separate school, I proposed to exclude such teaching altogether. In none of my published works does any such proposition appear, but the reverse. I have advocated teaching Christianity in separate schools, and I do so still; because the people are Christian: and I should outrage every principle of religious liberty and common sense, should I propose that persons, whose highest hopes and fears are bound up in the Christian religion, should, in any way, be precluded from having it taught to their children.

Secular education not godless.

The real state of the question is this. When purely Secular instruction in one school, and sectarian Religious instruction in another, were proposed, the Religious public objected, "In your Secular schools you propose 'a godless education.'" When we answered, "Nature is a Divine institution, and, in these schools, we shall teach God's natural laws, established to regulate human well-being, leaving you to teach sectarian dogmas in a separate school," Lord John replied, "This is far more dangerous!" More dangerous than what? Apparently, from the context, than the purely Secular instruction, which, however, many had denounced as "godless." Lord John appears to me, by implication, to deny that nature is a Divine Institution, that it reveals rules for the guidance of human conduct, and that these rules are entitled to our reverence as Divine.[1]

Secular education necessary for efficient Religious.

To teach supernatural doctrines as the basis of natural agency is preposterous; and to imagine that any education which does not impress on the understanding the invariable character of natural agency, and the inevitable results that flow from it, can prove effectual in regulating conduct in practical affairs, appears equally chimerical. While the supernatural is taught in schools as the basis of the natural, the natural will never be taught at all with practical effect.

Lord John Russell regards my ascribing Divine authority to nature as "dangerous." Dangerous to what? I cannot answer this question, except "to superstition." The Religious Emotions exist in man, and are very powerful incentives to action. They may be directed, in infancy and youth, to any objects or doctrines. To say that the direction of them to respect God's natural laws is dangerous, is absurd; while to teach God's order of governing in nature *without reference to Him*, leaves that teaching unwarmed, unhallowed, and unsupported by the Religious Emotions, and it loses greatly in its interest and its practical influence on the youthful mind.[2]

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[1] Science and Religion; Appendix xi. p. 313.

[2] "Life," by Charles Gibbon, vol. ii. p. 320. For further expositions of the nature and purpose of the Religion that should be taught in National schools, see the chapter "On the Training of the Moral and Religious Faculties through Science," p. 123; and in Appendix, Dr Andrew Combe "On the Introduction of Religion into Common Schools," and the extracts from Mr Templar "On the Religion of Secular Schools."

4. THE ADVANTAGES OF THIS EXCLUSION OF THEOLOGY FROM A NATIONAL SYSTEM OF EDUCATION.

The Secular education advocated teaches the true order of Providence.

I am prepared for the charge being made, that this is a proposal
constitute infidelity the basis of National Education; because the
der of nature, even when coincident with and sanctioned by
ristianity, is regarded by some minds as infidel. But I deny
at teaching the order of nature by which human happiness is
verned, is infidelity. Those who contend that it is so, forget
at, in this view, God himself would be the author of a great
stem of infidelity; for the whole Jewish dispensation was one
ich had its sanctions exclusively in its temporal consequences.
futurity was revealed to the Jews: The supernatural portion of
e Jewish Dispensation related chiefly to the nation in its national
pacity, and, in the opinion of some Christian sects, it is continued
the present day. These sects regard the existence of the Jews
a distinct people, unamalgamated with the races among whom
ey are dispersed, as a standing miracle. But we do not perceive
e personal conduct of the individual Jewish men and women
hom we know, to be now regulated by supernatural acts of divine
ministration; and is there reason to believe that, even before the
spersion, a miracle was resorted to, in order to reward or punish
ch private Jew who obeyed or transgressed the commandments?
a future state was not clearly revealed to the Jews, and if their
rsonal conduct was not formerly, and is not now, regularly
warded or punished by supernatural acts in this life, it seems to
llow that, in their individual capacities (when not reached by the
atute law), they were, and are, left under the ordinary adminis-
ation of the laws of nature; and if so, on what principle can
ucation in these laws be called "godless?" Besides, no one
oposes to exclude the teaching of the Scripture doctrines relative
eternity. All that is recommended is to provide for the teaching
these to the children of each sect according to the views and
ishes of their parents, at separate hours, and by separate teachers
om those engaged by the State.

It is truly and deeply Religious.

We are told, however, that this proposed separation of Secular
om Doctrinal Religious teaching, is "a gigantic system of godless
ucation." With great deference to the excellent individual who
tered these words,[1] the case appears to me in a different light.

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[1] Sir Robert Inglis, M.P. for Oxford; many others also so characterised it.

The Secular instruction advocated is truly Religious.

Apparently, he and his followers who have adopted this opinion, have looked so long and so intently on the Old and New Testaments, that they have lost sight of, or never attentively studied, the record of God's Natural Providence. If, for instance, we comprehend the structure and functions of the nervous system in man, and the vast amount of enjoyment of which it is the appointed vehicle when duly administered, and the extent of suffering which it entails on him when its laws are neglected or transgressed, and perceive that this is the workmanship of God, and that in this structure and its laws He is addressing our Wonder, calling on us to admire,—our Veneration, desiring us to reverence,—our Conscientiousness, commanding us to obey,—and our Intellect, inviting us to study, prove, and practise, what He has revealed; and that He rewards us with health, strength, and enjoyment, for obedience, and punishes us with bodily and mental pain and incapacity, and often with death itself, for infringement of its precepts: THIS IS RELIGION AS WELL AS SCIENCE. How any man of a serious and an enlightened mind can study and comprehend God's Natural Laws without having his Religious Sentiments vividly excited, I cannot comprehend. Is it not an abuse of terms to call that education "godless" which refers *all* that it teaches directly to the power, wisdom, and goodness of God himself?[1] In no sense of the words is the study of Natural knowledge and its practical applications a "godless education;" because it cultivates, trains, and enlarges the self-same faculties by means of which the grander doctrines relative to man's future destinies must be studied and apprehended.[2]

It would improve Theological instruction.

Some of the advantages which we should expect to follow from the separation of the Religious from the Secular element are the following:—This separation would ensure a better treatment of both branches. Religious instruction given by those educated in Theology, and whose profession it is to teach it, would become earnest, substantial, and practical. It would smite deep into the young hearts, and live there, associated with questions of love and reverence for the teacher and his doctrines, instead of being, as at present, too often hated and expelled from the memory, under the recollection of blows and drudgery associated with it in our Common schools.

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[1] "Has Mr Combe introduced to you a 'godless' subject? Many persons call it by that name. Yet God, in His wisdom, goodness, and power, is never for an instant lost sight of. Every Secular lesson speaks of His blessed works. It is 'godless to deny it.'"—James Simpson, in speech at Paisley, in 1851, at meeting in favour of National Secular Education, at which George Combe also spoke.—From *North British Daily Mail*. The Secular instruction recommended for National Schools was aptly characterised by Lord Brougham as "priestless," not "godless."

[2] National Education, pp. 16-19

It would improve the teaching of our schools.

In the next place, the understandings of teachers and the public would open to the real nature and unspeakable importance of the Secular branch of public instruction; and it would acquire a character of substantive reality and practicability which it has never yet attained, and which it never can reach, while the minds of laymen remain confused by the prevailing error of believing that the Religious element *includes* the Secular. When once the separation is made, the distinction between the two branches will become so palpable, and the advantages of teaching them apart so conspicuous, that men will wonder at their great repugnance to sever them. They will see that, while the *supernatural* constitutes the basis of the faith that is to lead to salvation, the fixed, permanent, and undeviating elements of nature form the ground-work on which temporal well-being reposes, and out of which it must be educed by human intelligence and effort.

It would give correct habits of thought in practical life.

Not only is there this palpable distinction, but the action of the mind in studying the different branches is widely dissimilar. In learning Theology, resting on a supernatural basis, the intellect, in many instances, must yield itself up to the emotions of awe, wonder, reverence, hope, and fear: "*Faith* is the *evidence* of *things not seen.*" In studying Secular Science, on the contrary, the intellectual process is reversed. Everything must be closely observed, profoundly analysed, and rigidly investigated. The pupil who, under the present system of training, goes into actual business without any distinct perception of the line of demarcation between faith and reason, is prone, in many temporal matters, to act with a neglect of due investigation, and a blindness to inevitable consequences, which are evidently referrible to the habits of easy trust and reliance which he has acquired in the department of Faith. How often do we see sincerely religious persons relying on prayer as a means of securing health, while, through lack of physiological knowledge, they are living in habitual violation of the laws on which God has seen proper to make this blessing depend! How many prayers are offered up for the success of mercantile and manufacturing enterprises by religious men, who, in conducting them, have disregarded every natural law of social well-being! And after ruin—the natural, and therefore inevitable, termination to this course of action—has overtaken them, how frequently and sincerely have they sought consolation in Religion for their errors and mortifications; ascribing their miscarriages to sin, or to the chastening hand of God out of love to their souls, instead of to their ignorance, rashness, and folly! The confusion occasioned in men's minds by the jumbling of the supernatural and natural in their training can alone account for such senseless abuses of religion.

It would furnish true guides of conduct.

By the separation of the two, the inflexible reality of nature will be recognised, and the young will be trained to the investigation of the laws of her operations, and to yield obedience to their requirements. Secular instruction will then embrace the substances, agencies, and laws of the material and mental worlds, and their relations to human well-being, including the human organism itself, with all its corporeal and mental functions, in the latter of which the laws of Natural Morality and Natural Religion will be found to rest as on a rock. Historical events and biographical characters (instruction in which will form a branch in such a curriculum) will then be expounded in such a connection with the basis on which they rest, and thus become far more effectual guides to practical conduct than the empirical expositions of them which have hitherto been given even in the best schools.

It would place Religion on a true basis;

After a few generations will have enjoyed this improved instruction, modifications in Religious faith may be expected to follow; but they will be gradually introduced, will rest on moral and intellectual convictions, and be supported by Divine truth drawn from the infallible book of revelation in nature. Under the present system, Religious belief is hastening to a state of anarchy. The Bible is undergoing a criticism of reason, such as it was never before exposed to, and the discoveries of Science are daily shaking the established interpretations of it to the foundation. To ignore Natural Science in our Common Schools is not the way to strengthen the falling faith, but the reverse; it tends to encourage atheism. In point of fact, many of the professors of atheism among the working-classes are strong-minded and dauntless thinkers, who, owing to the entire omission of Logical and Scientific instruction and training in their youth, have been left to flounder in a chaos of crude and disjointed facts and inferences, until their understandings have become bewildered. The orthodox custom of expressing horror and alarm at the

And stem atheistic tendencies.

avowal of these opinions, and proposing mere Bible teaching as the only remedy for it, proceeds from blindness to its cause. Let the professors of orthodoxy cease to obstruct the introduction of Secular knowledge into our schools, and let them try the power of a clear and forcible exposition, to the youthful mind, of God's agency in nature, accompanied by an appeal to the Religious Emotions, as a cure for this form of unbelief, and reserve their horror until this teaching, too, has failed, as *theirs* has done, to render these individuals religious. Horror and abuse of our erring brethren may be reserved, till we have fulfilled our own duty towards them in a rational form, as well as in a benevolent and religious spirit.[1]

Ambiguous terms in this discussion discriminated.

[In discussions on the teaching of Religion in schools, a difficulty constantly occurs from the ambiguity of the terms employed, especially of the word "Religion," from which the foregoing utterances of George Combe are not quite free. This arises solely from his writing on the subject at different times, and to different persons, to whom he had to accommodate his phraseology. Even after 1851, when he did so much good service to the discussion by his clear and happy distinction between Religion and Theology, as warp and woof, he uses the same ambiguous term "Religion" in both senses. "Secular" subjects, which, according to George Combe, should be taught in National Schools, include *all* subjects *relating to this world*, and therefore "Religion" itself, so far as it relates to this world, that is, its department of "Natural Religion" or "Natural Theology." What he would have excluded from these schools is that department of "Religion" that *relates to the other world*, which he proposes to designate the "Supernatural," as contra-distinguished from the "Natural, "Spiritual" as distinguished from "Secular," and "Theology" as distinguished from "Religion," and which he would have taught by parents and churches. George Combe's position on this much-controverted question may be exhibited thus :—

I. To BE INCLUDED *in National Schools* ; and taught by the National teachers there—
  1. All subjects *relating to this world : i.e.*, all the subjects and sciences which describe and interpret it ; and therefore,
  2. Universal Religion, or that department of "Religion" called "Natural."

} "Secular" subjects.

II. To BE EXCLUDED *from National Schools* ; and taught by parents and churches—
  1. All subjects *relating to the other world : i.e.*, the special "Theology" of parents and sects.
  2. Universal Religion, as far as it bears on this special "Theology."

} "Spiritual" or "Theological" subjects.

} Included under the general terms "Religion" and "Religious."

—*Edit.*]

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[1] *Westminster Review* of July, 1852, p. 22.

CHAPTER III.

BY WHAT MACHINERY SHOULD NATIONAL EDUCATION UNDER GOVERNMENT BE CARRIED ON?

George Combe's action in favour of National Secular education.

[To understand George Combe's position in regard to National Education, a brief statement of his action in regard to it is necessary. The various efforts at securing a broader National Education have already been sketched in the Introduction, Part III., secs. 5 and 6, and in the history of the Secular Schools, p. 201.

He furnishes the basis of the future National system.

The chief questions at issue in the educational controversy of the time were—By what agencies should National Education be carried on? and Should Theology be taught in National Schools? The celebrated Minutes of the Committee of Council, issued in 1846, gave aid to those schools only in which the Bible was taught, and refused it to all others in which it was not taught, and were, therefore, based on sectarianism. As has been seen, George Combe advocated a Secular system under Government control, and not under churches or voluntary agencies; and, along with his party, was therefore opposed equally to the then existing Government scheme, and those proposed by the advocates of church and of voluntary education. In 1841, after his return from America, he elaborated the ideas on the conduct of education for which he had been pleading from the first, and published his scheme for National Education in this country, with details as to the requisite machinery, based chiefly on the American and Prussian systems, in an able article on "Education in America," in the *Edinburgh Review* for July, 1841; and in papers in the *Scotsman*, in 1845, which appeared, the same year, in pamphlet form, on "National Education and the Common Schools of Massachusetts." These articles, especially the former, became the basis of the great Lancashire scheme, called "A Plan for the Establishment of a General System of Secular Education," issued in 1847, which has already been given in abstract, p. 238, and which is printed in full in the Appendix. This began the great struggle in Parliament to obtain a National System of education assisted and controlled by Government, between the Sectarian and the Secular educationists, both of their schemes being opposed by the Voluntary educationists; in all which movements, George Combe was a prominent actor. The struggle in England has already been briefly given, p. 237.

The educational struggle in Scotland.

A similar struggle went on in Scotland. In 1850, an association of the leading dissenters was formed for promoting a scheme of National Education under Government, and a "Manifesto" was issued declaring their views, on account of which they were known as "The Manifesto Party." George Combe and his friend, James Simpson, "were excluded from participation in the project, as dangerous persons." The former published his reasons against this scheme, in a pamphlet distributed gratis. In 1851, the Secular educationists prepared a Non-sectarian Bill for Scotland, which was presented to Parliament by Lord Melgund, in June of that year, George Combe having greatly helped his Lordship in the preparation of the Bill. The Bill was lost by the narrow majority of 13, being 137 against 124. This defeat, which they hailed as a great victory, only roused the Secular Education party to renewed and more earnest efforts. The Glasgow Public School Association was formed (see p. 224), and a series of meetings held, in 1851, all over the country, in which George Combe took a most active part, in valuable speeches, which have been quoted in this work. In 1852, he still further assisted the cause by a very able article on "Secular Education," in the July number of the *Westminster Review*, written at the suggestion of his friend the editor, Dr Chapman, which gives an admirably clear, full, and earnest *résumé* of the whole subject, embodying his latest conclusions, which is given in this work, in the present Part.

The final success of the Secular party.

The Secular educationists continued their agitation in both England and Scotland, till their efforts were greatly crowned with success in the passing of the English Education Bill in 1870 and the Scotch in 1872, in which most of the points for which they had so long and so strenuously contended were embodied. For an account of these struggles, see the Introduction, and p. 240; and, for fuller details, George Combe's "Life," by Charles Gibbon, vol. ii., *v.* Index.—*Edit.*]

1. SCHEMES OF NATIONAL EDUCATION UNDER GOVERNMENT OPPOSED BY GEORGE COMBE.

George Combe thus gives his opinion of the scheme of the "Manifesto" party of 1850:—"Two schemes for accomplishing

The scheme of the "Manifesto" party in Scotland.

National Education have been propounded.[1] One emanated a ago from a number of highly respectable and influential indivi in this city, and proposed to divide Scotland into school distric levy a rate for a school and a schoolmaster on each, and to lea the ratepayers the power of electing the teacher, and prescribin subjects to be taught, one of which, it was pretty plainly indic should always be 'sound Religious instruction.' On the appea of this plan, I published objections against it, and subsequent ex ence has proved that they were well founded. It has made no gress. It virtually proposed to give the majority of ratep power to introduce their own religion into the schools, and t the minority for teaching it. Moreover, it would have placed schools chiefly under clerical control. The members of every ch and chapel act like a corporation. The clergyman issues his date, and the office-bearers and congregation execute it. Or word being given, the adherents of each sect would muster a meetings for the election of teachers and for other school busi and try to carry their own candidates and measures. They w convert the district into a theatre of theological war, in whic most numerous sect would triumph, and your interests woul liable to be trodden under foot if incompatible with theirs. defeated minority would be left with embittered feelings an redress, except that of withdrawing their children from such pa the education as they did not approve of, after having paid fo whole."[2]

Objections to this scheme.

These more fully stated.

His reasons for opposing their scheme he thus states to Pro Hodgson :—

1st, It does not suggest whence the funds are to come.

2nd, It speaks of a *sound Religious education* as a primary c in National Schools. By these words, the clergy mean the Catec and Confession of Faith; and the Liberals *know* that it is so I object to this.

3rd, It proposes that the subjects to be taught in the school be determined by a *majority of the heads of families;* which n by the evangelical sects, moved by the clergy.

4th, If money is to come from the Exchequer, or to be raise ocal taxation, it will be contributed partly by Roman Catholics, Unitarians, Jews, and Deists; and yet the orthodox majority of heads of families will set the convictions and rights of these parties at nought in the management of the schools.[1]

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[1] The above refers to the schemes of the "Manifesto" party, and Secular Educationists, of the former of which he here speaks.

[2] Speech in Edinburgh, in 1851, on National Education; from the *Scot*

George thus expresses his opinion of the Committee of Council scheme, based on the Minutes of 1846:—

Education should not be sectarian.

Every motive of duty and interest, therefore, calls on the laity and the legislature to disenthral education from the dominion of sects, and to allow to God's Providence a fair field for working out its beneficial ends. Disguise the fact as we will, the order of nature—in other words, God's Secular Providence—is a power which, in this world, shapes our destinies for weal or woe; while the peculiar doctrines of sectarianism only exalt the consequence and power of clerical teachers, and the few zealous laymen who constitute their staff.

Objections to the scheme of the Committee of Council.

To vote money, therefore, as was done under the Minutes of Council, of August and December 1846, to every sect, to enable it to educate its own members in its own Religious doctrines, is actually to endow discord.[2] It is deserting the shrine of reason and of moral and religious principle, and bowing at that of prejudice and bigotry. It is renouncing all reverence for God's Providence, as revealed in the course of nature; for every one of the sects, if it does not exclude, deny, and denounce the order of nature as a source of practical instruction to the young, at least practically treats it as a matter of small importance compared with its own peculiar dogmas. To give them the public money to enable them to pursue this course of instruction more effectually, is to encourage them in placing their own wisdom high above that of the Creator. Nor is this the worst feature of the case. To make the teaching of God's order of Providence in nature *as religious truth*, if the Dogmas are not taught along with it, an insurmountable objection to granting public aid to Secular schools,[3] is actually treating the Divine laws as dangerous, and, however unintentionally, with contumely; yet this was the rule of the Committee of Council on Education.

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[1] See "Life," by Charles Gibbon, vol. ii. p. 290.

[2] George Combe said the Minutes should be called "Minutes of Council to encourage sectarian religious teaching, and to perpetuate sectarian obstructions and disputes with increasing bitterness to the last generation. See his "Life," by Charles Gibbon, vol. ii. p. 237.

[3] The Secular Schools, though making frequent applications to Government, were refused all aid by Grants, because the Bible was not taught. See p. 257.

Concurrent endowment of Sectarian education bad.

Truth alone can benefit a nation, and the doctrines of *every sect* cannot possibly be true. To give each of them public money, therefore, to teach its own tenets, is to endow equally truth and error. It is tantamount, in Physics, to setting in motion antagonistic forces; in cookery, to paying one man to pour wormwood, and another sugar, into the cup of which the nation is to drink. By all means, allow the men who prefer wormwood to fill their own bowl with it; and those who prefer sugar to fill theirs with sugar; but let not the Government, which superintends the cup out of which all must drink, pay men with national money to destroy the contents of that cup, and render them a potion which no human palate can endure. To pay all sects, who are teaching solemn contradictions, implies an utter disbelief in any intelligible order of God's providence on earth. It deliberately supersedes the teaching of it, and plants conflicting Catechisms, Liturgies, and Confessions, in its place. If the heads of the Government cannot discern in science an exposition of the order of nature, or, in other words, of the course of God's Providence on earth, they may, at least, so far defer to Divine Wisdom and Intelligence as to believe that God's Providence, however dark, must be self-consistent, and that it does not promise to prosper contradictions![1]

2. THE GOVERNMENT SYSTEM ADVOCATED BY GEORGE COMBE.

The scheme advocated stated.

In my opinion, the true plan for educating the people is that which is universally known as that of the National Public School Association for England and Wales, whose head-quarters is Manchester. It proposes to separate Religious from Secular instruction; to leave the former to parents and pastors, and to import the latter in schools supported by local rates, and managed by local committees of ratepayers; the schools to be open to, but not controlled by Government inspectors; and every form of sectarian Theology to be rigidly excluded.[2]

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[1] Science and Religion, pp. 273-4.

[2] *Westminster Review* for July 1852, p. 22. See an outline of the plan (which was based, as already said, on George Combe's article in the *Edinburgh Review* of July 1841), and a history of the steps taken to promote it, p. 237 *et seq.* The full text will be found in the Appendix, as worthy of preservation, on account of the influence it had on recent legislation on education, and the part George Combe played in regard to it.

The demands of the Secular Educationists, as to the relation of the National

The National Public School Association.

In the different meetings held in favour of National Secular Education in Scotland in 1851, George Combe submitted a resolution similar to the following:—

That the meeting approve of the basis of the Association for National Public School Education in England and Wales, expressed in the following words:—"This Association is formed to promote the establishment, by law, in England and Wales, of a system of Free Schools[1]—which, supported by local rates, and managed by local committees, specially elected for that purpose by the ratepayers, shall impart Secular instruction only, leaving to parents, guardians,

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Summary of views of the Secular educationists as to Theology and National education.

Schools to Theology and the Churches, are thus well summarised by James Simpson, George Combe's friend, in a series of propositions submitted by him at the numerous meetings held, in 1851, in favour of Secular Education, at which both spoke. "The conditions which have always appeared to me to be essential to a just system of National Education, practicable with a population divided into a great number of religious denominations, are the following:— 1st. That education shall embrace both Secular and Religious instruction. 2d. That that department of Religious instruction which inculcates the creeds or confessions of special Theologies, shall not be given in the Secular school; so that the Secular school, imparting natural knowledge only, may be open to all, irrespective of their religious persuasions. 3d. That the Secular teacher shall not give special Theological instruction, but confine himself to the duty of implanting Religious feeling in the minds of his pupils, by the demonstration of the power, wisdom, and goodness of God, as manifested in His natural institutions—in other words, Universal Theology. 4th. That the Secular teacher shall not be subjected to any special Theological test whatever. 5th. That no denomination or sect professing a special Theology shall control or interfere with the instruction given in the Secular school. 6th. That the State shall not interfere with the right of any sect to impart their own specific Theology to the young of their own persuasion; but shall provide Secular education only for the whole people. 7th. That the parent shall not be controlled in choosing the special Theological instruction which his child shall receive, and the pastor who shall give it. 8th. That, as a logical sequence to the foregoing conditions, the Holy Scriptures shall not be a Secular school-book, or, in any of its versions, be read in that school; but shall be committed, as their guide in instructing the young, to the parent and pastor alone. Lastly, That it is the paramount duty and high privilege of the clergy, the most numerous body of teachers in the country, to undertake the instruction of the young in the special Theology of their own persuasion."

[1] The principle involved in the question of *Free* Education has been much debated on both sides. To universal Free Education, supported by rates, the frequent objection, that it is pauperising, is a fallacy, because the education given is altogether *paid for* by the people. In favour of Free Education, see the able work on "The Free School system of the United States," by Francis Adams, Secretary of the National Education League (London, Chapman and Hall, 1875), the fullest exposition of the subject yet written; and, on

and religious teachers, the inculcation of doctrinal religion, to afford opportunities for which, the schools shall be closed at stated times in each week."[1]

GeorgeCombe's scheme more fully explained.

Sometimes, after explaining the purpose and proceedings of the Association, George Combe expressed the aim of the agitation more succinctly thus:—

> I conclude by expressing an earnest hope, that you will second its efforts by petitions to Parliament, and every other constitutional means in our power, till you obtain an act for Free Unsectarian Secular Education, under the control of the ratepayers.[2]

George Combe thus explains his views of a National System to Mr Cobden, M.P.:—

> The scheme which I desire to see recommended to Parliament and the people is one which should simply form the inhabitants of a social district into a corporation, with power to tax themselves to erect and maintain a school, for instruction in the conditions of Social Well-being.[3] I should have no objection to add power to raise a rate for Religious teaching, provided that no man would be bound to pay it who did not approve of the religion taught by means of it.

It would secure the highest intelligence for education;

And enable the Religious to do more justice to Secular education.

> This simple machinery should, in time, change the character of our schools. In the first place, the highest lay intelligence could act with effect in the system to be pursued in the school, by appearing on the platform and advocating his own views, which he would have a right, as being subject to the tax, to do; whereas, at present, this intelligence is sedulously excluded from influence over the schools of a Religious origin. Were we all taxed to support schools, we could urge our views in a way which we cannot do as mere voluntary subscribers. Moreover, and in the second place, the Act of Parliament which limited the instruction to the conditions of temporal, individual, and social well-being, would give a different direction to the thoughts and aims of the Religious men. Their

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the other side, Dr Rigg's "National Education," chap. v. (London, Strahan & Co., 1873). Dr Rigg is replied to by Mr Adams, in the above work, Appendix A.

[1] From speech at the Edinburgh meeting, in 1851; from *the Scotsman.*

[2] Speech at Paisley, in 1851, on National Education, from the *North British Daily Mail.*

[3] Of course, George Combe includes, in the above phrase, all the usual *Instrumental* subjects of instruction, along with the others he so earnestly advocated as necessary to a good and sound education.

churches and chapels being banished to the separate schools, they would exert their understandings to render the Secular instruction really efficient for its end. In a brief space of time, comparatively, they would, by the sheer necessity of their position, be forced to study the real merits of Secular instruction, and having discovered these, they would act on them.

The effects of the system in America.

This takes place in America. Men like Horace Mann, Dr Howe, and Henry Barnard,[1] have an influence there which no individual can wield in this country, unless avowedly sectarian, and then he can act only on his own sect, and under the trammels of his creed. The general ignorance of the natural conditions of Well-being, which still prevails in the United States, is the cause why instruction in this knowledge is not, to a large extent, introduced into their schools; but their laws leave the doors open for the entrance of a higher state of knowledge, and give the professors of it a *legitimate right* to urge its introduction, which is wholly wanting here.

Its certain effects in this country.

You, my respected friend, in Parliament, stand in the position which Horace Mann does in America. You have a *right* to lay bare the nakedness of the existing schools, and to urge Parliament and the nation to introduce a better system. Fulfil this mission, and I am satisfied. Leave it to the people who pay, to teach what they please, limiting the instruction in the Secular school to the conditions of temporal Well-being, and *you cannot* fail. Whatever principles tend to that end will, sooner or later, find their way into the schools, and all the sooner that there will be no rival objects to exclude them.

When Theological teaching could be given in National schools.

One word more: You say that you "would not prefer mixing Secular and Religious teaching, but would not set out with *prohibiting* such a union where it was desired by others." Neither should I, if I saw any possibility, in a National scheme, of avoiding injustice and oppression of the minority in such cases. Whenever a school district is absolutely unanimous in its desire to mix them, as in your parish, by all means let this be done; only let the legislature provide that, even in this case, the Government Inspectors shall have a right to see that the Secular instruction is not a sham, and also that, if there be dissenters, they shall not be taxed to support a religion of which they disapprove.[1]

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[1] Regarding Dr Howe, see p. 122; and Kiddle and Schem's "Cyclopædia of Education." Henry Barnard, like Horace Mann, has been one of the most eminent educationists of the United States, and, indeed, of the world, devoting his great abilities to broaden and advance it, by unceasing labours, travels, and writings. He is the author of numerous excellent works on the subject, especially "School Architecture," "National Education in Europe," and "Educational Biography." He has done more than any other to introduce the educational ideas of Germany into English speaking countries, by translations of the chief works. He was born in Hartford, Connecticut, and still lives (1878). See the above Cyclopædia regarding him.

The need of teaching the conditions of Well-being in National schools.

In his lecture on the Comparative Influence of the Natural Sciences and the Catechism, George Combe makes the following appeal regarding the education required for National Schools :—

I ask you, whether you are disposed to decide that, in future, our country, renowned for practical sense as well as for earnest religious fervour, shall remain the byword and laughing-stock of Europe and America, as the most pious and most drunken nation in the world; or whether, while we cling to our Religion, we shall not also teach in our schools, and practise in our lives, that knowledge of God's Natural Laws without obedience to which Religion, as to its effects on this world's well-being, is but a sounding brass and a tinkling cymbal? In the name of that God whom we adore and who assuredly created heaven and earth, and who rules on earth through the instrumentality of his works, let us try whether a knowledge of these laws will not exercise some little influence on the youthful mind, in relation to the world's affairs, and help, in however limited a degree, to stem that downward tendency of our people to vice and destitution, which we all so sincerely deplore.

Our duty to the country in view of this.

If we participate in any degree in these views, a solemn duty remains on each of us,—viz., to disseminate them, and to act on them. Let us petition Parliament again and again, till our voices are heard, for a scheme of National Secular Education, that shall, in addition to reading, writing, and arithmetic, convey to every child, *free of cost*, a knowledge of the works of creation and their adaptations to the human mind and body; leaving, to parents and pastors and other religious instructors, the duty of teaching that way of salvation which the conscience of each approves of and prefers, so that the rising generation may be saved equally from physical, social, and spiritual degradation.[2]

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[1] Letter to Richard Cobden, M.P.; see George Combe's "Life," by Charles Gibbon, vol. ii. p. 317. Mr Cobden was one of the most earnest advocates and movers in the Secular Education party, and was on intimate terms with George Combe. See p. 237 of the present work, for his part in the Manchester movement; and George Combe's "Life" (Index) for his relations with George Combe.

[2] Lecture on "The Comparative Influence of the Natural Sciences and the

The machiner of the American system.

In advocating a Non-sectarian system of National Education, I do not propose to deliver over scholars and teachers to Government officers, with power to mould their minds into whatever forms our rulers may prefer, as some advocates of Sectarian instruction pretend. The United States of America have set us a bright example in this enterprise. They have divided their country into convenient spaces, and designated them as School-districts. The existing law of Massachusetts (Revised Statutes, 1835, title x., chap. 23), ordains, that districts containing fifty families shall maintain one school, districts containing one hundred and fifty families shall provide two schools, and so forth,—"in which children shall be instructed in reading, writing, geography, arithmetic, and good behaviour, by teachers of competent ability and good morals." Larger districts, again, are required to maintain a school, "in which the history of the United States, book-keeping, surveying, geometry, and algebra, shall be taught." And, if the locality shall contain four thousand inhabitants, the teacher shall, "in addition to all the branches above enumerated, be competent to instruct in the Latin and Greek languages, general history, rhetoric, and logic." The law requires the inhabitants to raise money by taxing themselves for supporting these schools, and ordains them to appoint committees annually for managing them.[1]

Arrangements for giving Theological instruction.

George Combe thus describes the machinery for imparting "Theological" instruction in Massachusetts, which he wished adopted in this country :—

For the purpose of allowing time for Religious instruction, the Wednesdays and Saturdays are generally made half-holidays in the Common schools of New England. On the afternoons of those days, accordingly, the clergyman of each sect collects the children of his own congregation, from whatever school they may be attending, into a schoolroom, which in most instances forms the basement storey of his church, and there communicates Religious instruction to them in his own tenets. Again on Sundays, before sermon, between sermons, or after the afternoon service, the children are collected in the same

Shorter Catechism on the Civilization of Scotland," delivered, in Edinburgh, on 25th November, 1851.

[1] Science and Religion, p. 276. Farther details concerning the machinery by which the schools are managed, and the taxes levied, in Massachusetts, will be found in an article in the *Edinburgh Review* for July 1841, under the title of "Education in America" (G. C.); also in Part Fifth, chap. iv., of the present work.

Arrangements for Theological instruction.

schoolroom, and the same instruction is continued. The attendance at these Religious schools was, generally speaking, very large, so much so as often to attract my especial notice, on account of the numbers of children whom I used to see streaming from the schoolrooms at the hours of dismissal. And, moreover, the Religious instruction was very efficient, much more so than that which in Scotland is communicated in most of the lay schools. In the American Religious schools the clergyman was the head instructor, and, in his pupils, he saw before him the future members of his congregation, on whose zeal, intelligence, and attachment his own bread, reputation, and influence would, in a few years, depend. These considerations, with his deep interest in the spiritual welfare of the young generation, gave to his instruction a degree of liveliness, earnestness, and energy which are rarely seen in the Religious teaching of the lay schools of this country.[1]

When compulsion is necessary in a National system.

Government *has a right* even to *compel* its subjects to receive such Secular instruction as is necessary to qualify them for the discharge of their social duties; but I am satisfied that no compulsion would be necessary, and I do not advocate it, till all means of moral persuasion and voluntary influence have been tried and failed. Entertaining, as I do, the fullest confidence in the might and efficacy of moral means, when honestly and judiciously applied, I am no advocate for the use of physical force to accomplish a moral end. But, as the *right and the duty* of the State at all to interfere in education have been contested by men whose opinions are entitled to great respect, I have considered it proper to grapple with the objection, and sift it to the bottom, to the best of my ability.[2]

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[1] Letter to the *Scotsman*, quoted by Mr P. Rylands, in a paper "On the facilities for the Religious education of the People which might be afforded in connexion with the Plan of the Lancashire Public School Association;" one of a volume of excellent essays by good hands, traversing the whole subject of controversy, issued by the above Association, in 1850, called "National Education, not necessarily Governmental, Sectarian, or Irreligious," well worth perusal (London: C. Gilpin; Manchester: Simms & Dinham).

[2] National Education, p. 35.—The principle of Compulsion was recognised in the English Education Act of 1870, according to which School Boards, though not universally instituted, might be established by a majority of the ratepayers, and compulsion was optional; in the Supplementary Act of 1876 compulsion is made universal. In the Scotch Education Act of 1872, School Boards and compulsion were made universal; and compulsion is made more stringent in the Supplementary Act of 1878. See a very good *résumé* of the history of Compulsion in different countries, in Kiddle and Schem's "Cyclopædia of Education," *s.v.* Compulsory Education.

CHAPTER IV.

EXAMPLES, IN OTHER COUNTRIES, OF NATIONAL UNSECTARIAN EDUCATION UNDER GOVERNMENT.

1. THE HISTORY OF THE STRUGGLE REGARDING SECULAR EDUCATION IN IRELAND.

The period of Sectarian teaching in schools:

AN instructive example of the practical results of teaching Religious doctrines irrespective of Natural Science and its applications is afforded by Ireland; and I shall exhibit a brief outline of the history of her educational efforts and their effects.

Protestantism only taught.

The Church of England long wielded the legislative powers of Ireland, through the medium of the Irish Parliament, which was composed of Protestants alone, Roman Catholics being rigidly excluded. These legislators apparently embraced literally, and practically acted upon, the Church's views of the nature of man, and held that there could be no beneficial education except that which was based upon Religious truth,—and, moreover, that their own church was the sole depository of that truth. They regarded the Roman Catholic faith as fundamentally erroneous, and therefore incapable of affording a sound basis for Secular instruction. Under these convictions, the Government of Ireland, "for nearly the whole of the last century, laboured to promote Protestant education, and tolerated no other. Large grants of public money were voted for having children educated in the Protestant faith, while it was made a transportable offence in a Roman Catholic (and if the party returned, high treason) to act as a schoolmaster, or assistant to a schoolmaster, or even as a tutor in a private family.[1] The Acts passed for this purpose continued in force from 1709 to 1782. They were then repealed; but Parliament continued to vote money for the support only of schools conducted on principles which were regarded, by the great body of the Roman Catholics, as exclusively Protestant, until the present system (the Irish National School system) was established in 1832."[2]

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[1] See 8th Anne, c. 3, and 9th William III., c. 1.—(G. C.)

[2] See Letter from Lord Stanley to the Duke of Leinster, on the original formation of the National Board; dated London, October 1831.—(G. C.)

These words are quoted from the Sixth Report of the Commissioners of National Education in Ireland, § 10, p. 135, and are deeply instructive. It was a fundamental error, in the Protestant Irish Parliament, to entertain the view of human nature which lies at the bottom of these enactments. Man does not possess a single power which is essentially and "of its own nature inclined to evil," as the Church teaches us. On the contrary, there is a legitimate sphere of action for every function of the body and every faculty of the mind; and it is only the abuses of these, through ignorance and unfavourable influences, that constitute error and crime, and lead to misery. There was in man, therefore, from the first, and there is now in him, a capacity for education, by the development and right direction of his natural gifts; and both his own constitution and that of the external world are arranged with reference to that development, to render him prosperous and happy in proportion as he pursues it in a right direction, or miserable if he neglects it or pursues it in a wrong way. Apparently the Protestant Government of Ireland, being disbelievers in these institutions of Divine Providence, and sincerely convinced that the Protestant religious faith afforded the only basis for a sound education, placed the before-recited enactments on the statute-book; and the consequences are now before us. The diffusion of the Roman Catholic faith in Ireland has not been checked; because, Sectarian education being in its own nature separable from Secular, the priests of that religion continued to instruct their flocks in their own doctrinal tenets, and have reared nearly seven millions of human beings[1] devoted to them in soul and body, and ready to sacrifice everything that is dear to humanity, including life itself, in their defence.

But these statutes effectually prevented the instruction of the Irish people in the great laws of Providence on which social order and temporal prosperity depend: They prohibited the cultivation of their Intellectual powers, and the development of their Moral Sentiments, on which hang the security of person and property, public tranquillity, and many of the enjoyments and amenities of private life. All this, I say, was deliberately and systematically prevented by Parliament; and we now see a sincerely devotional people (for no candid observer can doubt that the Irish Roman Catholic peasantry are sincerely and deeply devotional) deplorably deficient in mental energy and industry, sunk in the lowest depths of helpless poverty, and—under the sufferings engendered by want—turbulent and murderous, false in covenants, untrue as witnesses, and wild and impulsive in revengeful action. Truly, when viewed in this light, they do seem to realise the orthodox description of human nature; but this is only the dark side of their character. In more favourable circumstances, they are kindly, cheerful, affectionate, and respectful to superiors, showing that they still possess the higher feelings of our nature; but how far may not their fearful aberrations and deficiencies have been aggravated by the imperfections of their training and education?[1] Their qualities as a race may present obstacles to their improvement; but this affords no apology for having denied them, for so many generations, the means of Secular education, except at the price of their Religious faith.

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[1] The above refers to the statistics of 1841, when the population was 8,175,124. Between 1841 and 1851, the population decreased, chiefly through emigration, nearly 20 per cent.; between 1851 and 1861, 11½ per cent.; between 1861 and 1871, nearly 7 per cent. In 1871, the population was 5,412,377; and the number of Roman Catholics, 4,141,933.

The causes of these explained.

By prohibiting the use of the natural means for drawing forth the uman powers in the sphere of virtue, the law has allowed them to uxuriate in that of vice; and, in the present condition of Ireland,[2] e read the consequences attached by the Author of nature to the eglect and infringement of His laws. We see the *beau-ideal* of the sults of dogmatic teaching, when Secular instruction is dissevered rom it. In England and Scotland, a higher natural endowment of ind in the people, and more favourable circumstances, have led to e infusion of a certain amount of Secular instruction into the hools for Religious teaching; but among the Irish peasantry, for any generations, the priest alone was the instructor. Secular nowledge cultivates habits of correct observation of things which xist, of just appreciation of the effects of their qualities and modes f action, and of forethought and consideration regarding the adaption of our conduct to their influences. *Purely* doctrinal teaching —that is, the cultivation of Wonder, Cautiousness, Hope, and eneration, as the leading emotions—fills the mind with fearful or ublime contemplations and aspirations, having their issues chiefly n eternity; and, as these doctrines appeal to faith more than to eason, they do not cultivate habits of exact observation and reflection on this world's constitution and laws. They do not necessarily irect the attention of the mind to the proper arrangement and administration of Secular affairs in conformity with the laws by which they are governed, but divert it away from them, and concentrate it beyond them, in regions of eternal misery, or of glory and bliss.

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[1] George Combe speaks from personal knowledge and study of Ireland, in hich he was greatly interested. See his "Life," by Charles Gibbon (Index).

[2] This refers to 1848, when the above was written.

Their necessary results on the condition of Ireland.

Ireland has been taught according to these principles, and her people are imbued with them. Yet, because this world is an existing reality, instituted and governed by God according to laws adapted by Him to its present condition; and because man has been fashioned by Him in relation to it, and required by his constitution to act in intelligent accordance with its qualities and agencies; and because much of this department of Divine teaching has been neglected in the education of the people of Ireland: they present the spectacle of poverty and ignorance, and of crime and misery, which now appals the world. Again, therefore, I venture to repeat, that *an important use of the Religious Sentiments is to lead men to study, venerate, and obey, God's Secular institutions;* and, after they have done their duty in this department, they may be legitimately employed in expatiating in the fields of eternity.

The Commission on National Education appointed.

In 1832, as already mentioned, the British Government, moved, not by Religious teachers of any sect, but by its own Secular perceptions, instituted the existing Commission for aiding in a National education of Ireland on different principles. Lord Stanley, then Secretary for Ireland, in his letter to the Duke of Leinster before referred to, says:—"The Commissioners, in 1812, recommended the appointment of a Board to superintend a system of education, from which should be banished even the suspicion of proselytism, and which, admitting children of all religious persuasions, should not interfere with the religious tenets of any. The Government of the day imagined that they had found a superintending body, acting under a system such as was recommended, and entrusted the distribution of the national grants to the care of the Kildare Place Society.[3] His Majesty's present Government are of opinion, that no private society, deriving a part, however small, of their annual

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[1] See this idea developed more fully, p. 149, *et seq.*

[2] The Commissioners of National Education in Ireland.

[3] This was an educational society founded, in Dublin, in 1811, "to assist schools with grants, establish model schools, publish useful books, supply school requisites at cost prices, keep an annual inspection, and encourage masters by gratuities." It was utilised by Government for distributing grants to schools, the first grant, of £6980, being made in 1814. It accomplished much good. See Godkin's "Education in Ireland," chap. v. (London: Saunders, Otley, & Co.)

income from private sources, and only made the channel of the munificence of the Legislature, without being subject to any direct responsibility, could adequately and satisfactorily accomplish the end proposed."

He proceeds to mention, that this Society, with the purest motives, enforced "the reading of the Holy Scriptures, without note or comment, in all their schools;" and that their efforts to teach the Roman Catholic population proved abortive, because this Church denies, "even to adults, the right of unaided private interpretation of the sacred volume with respect to articles of religious belief." The Roman Catholic clergy "exerted themselves with energy and success" against the system. "The Commissioners of Education, in 1824–5, sensible of the defects of the system, recommended the appointment of two teachers in every school, one Protestant and the other Roman Catholic, to superintend separately the Religious education of the children;" "but it was soon found that these schemes were impracticable," and, in 1828, a Committee of the House of Commons "recommended a system to be adopted, which should afford, if possible, a combined Literary, and a separate Religious education, and should be capable of being so far adapted to the views of the religious persuasions which prevail in Ireland as to render it, in truth, a system of National education for the poorer classes of the community."

Scripture reading without comment required.

A Protestant and a Roman Catholic teacher for each school.

Accordingly, Commissioners were appointed, "composed of men of high personal character, including individuals of exalted station in the Church," and "of persons professing different religious opinions;" and Parliament placed funds at their disposal, to execute this beneficent object. The Commissioners proceeded to their task in a pure, upright, and enlightened spirit; and their first regulation is, that "the ordinary school business, during which all the children, of whatever denomination they be, are required to attend, and which is expected to embrace a competent number of hours in each day, *is to consist exclusively of instruction in those branches of knowledge which belong to Literary and Moral education.* Such extracts from the Scriptures *as are prepared under the sanction of the Board* may be used, and are earnestly recommended by the Board to be used, during those hours alloted to this ordinary school business." The second regulation is, that "one day in each week (independently of Sunday) is to be set apart for Religious instruction of the children; on which day, such pastors or other persons as are approved of by the parents or guardians of the

A new Commission nominated.

Combined Secular and separate Religious teaching instituted.

children, shall have access to them for that purpose, whether these pastors shall have signed the original application (placing the school under the Commissioners) or not." There are still other liberal and judicious regulations for increasing the facilities for separate Religious instruction, which I need not quote.

The scheme was founded on sound principles.

Tried by the principles which I have now laid down, these proceedings were essentially sound. That is to say, there is a vast field of knowledge, physical, moral, religious, and intellectual, relating to this world and its administration, which is independent of all notions concerning the best means of securing happiness in a future state; and which Jew, Christian, and Pagan must equally study, and on which they must equally practise, before they can secure to themselves prosperity on earth: and, as the functions of Government are limited to the present world, this field is the only one over which it can legitimately exercise any control. These principles were essentially recognised and acted on by the Legislature, when it appointed the Irish Board of Education.

These principles explained.

They did not, indeed, profess to take up this position; but they approached as near to it as circumstances would permit. The nation consisted of the sects A, B, C, and D, each of which was deeply impressed with the importance of Religious instruction, and also of Secular education, to the young: but A held certain opinions on points of faith which B, C, and D rejected; B held some opinions, the soundness of which A, C, and D disputed; and so with C and D, each of which had its peculiar views,—belief in which it made an indispensable condition of admission to its schools. The consequence of these differences was, that educational effort was paralysed, and schools either did not exist, or were comparatively empty. The British Parliament solved the difficulty, by leaving all sects and individuals to manage their own schools, and teach their own children in Secular and Religious knowledge, in their own way; but it proffered a helping hand, in the form of pecuniary aid, to such of them as were willing to open and conduct schools on the principles, Secular and Religious, *in which all were agreed.* This agreement was secured by placing the schools under Commissioners chosen from different sects, each of whom had a veto on teaching any doctrine of which he did not approve. These Commissioners were able, liberal, and enlightened men, and speedily discovered a vast field of solid information, both Secular and Religious, respecting the truth and utility of which they were unanimous; and they followed out the instructions of Parliament by

The character and action of the Commission.

teaching this to the people. Their books embrace the elements of Literature, Science, Morals, and Religion, the latter generally expressed in Scripture language; but they contain few sectarian doctrines.[1]

The opposition made to the system.

What reception did this wise measure meet with from the Church of England, and many other religious sects? It was decried as "infidel and godless," misrepresented, abused, and opposed, in the most unscrupulous and unmeasured terms. In the name of the religion of truth, the grossest misrepresentation was resorted to, in order to excite the public indignation against it. But the excellent sense, truly Christian spirit, and calm temper of the Commissioners, with the Archbishop of Dublin and the Roman Catholic Archbishop, Dr Murray, at their head, meekly sustained and triumphed over every hostile attack; they persevered in their wise and virtuous measures prescribed by Parliament, and their success has been correspondingly great.

A résumé of the history of Irish education.

Let us, then, briefly re-survey the history of education in the sister kingdom. The Irish Government first left the Roman Catholic population of that country for nearly a century to the influence of Religious teaching alone, prohibiting, under the severest penalties, Secular instruction from being given to them, by the only class of persons from whom they would receive it. Secondly, it tried to connect Secular instruction with reading of the Protestant version of the Scriptures, as an indispensable condition; and its efforts on these two principles egregiously failed. Thirdly, the British and American Legislatures have established schools, supported and controlled by the State, for communicating Secular and Religious instruction, exclusive of all peculiarities of sectarian faith; and, in spite of violent and powerful opposition, they have been successful. According to my reading of the order of creation, the failure of the sectarian, and the success of the universal system, afford instructive practical lessons to the statesmen; for beneficial results are at once the evidence and the reward of the soundness of the principles by which they are attained.[2]

When Mr Buxton, in a recent discussion in the House of Commons,[3] made the unwilling admission that the Irish system of

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[1] Among their books, is an excellent little work on the "Evidences" of Christianity, which has obtained the approbation of all the Commissioners. —(G. C.)

[2] National Education, pp. 28–35.

[3] In July, 1858.

The pressure of the churches against the system.

National Education has been "a splendid success in its main end of conveying a first-rate education to a great multitude of the poorest children," he admitted a great deal; but, when he added that "in its secondary aim of bringing up the Protestant and Catholic children under the same roof, it has been an utter failure," he made an accusation which is not only very serious, but is not quite unfounded. Although, as we are about to show, matters are not so bad as Mr Buxton and his party represent, and though their object is to make them worse; there is no doubt that the pressure of contending Churches in Ireland has led the administrators of the system to make concessions which not only materially infringe the principle on which it was founded, but, instead of conciliating, seem to have given new strength and materials to the agitators who would render the system entirely and rigidly sectarian.

The two classes of Irish National schools.

There are two classes of National Schools. The one are called "*Vested Schools*," and the other "*Non-vested Schools*." The "vested schools" are those which are invested in the Commissioners, or were vested, previous to the incorporation of the Board, in trustees, for the purpose of being maintained permanently as National schools. Before any grant is made towards building a "vested" school-house, at least one-third of the whole sum which the Commissioners deem necessary for the erection of the house, providing furniture, &c., must be raised by local contributions, and the lease of the school-house must be executed in favour of the Commissioners in their corporate capacity. They keep such school-houses and furniture in repair. "Non-vested" schools are those which have been built entirely at the expense of private individuals. Although held by trustees for the purposes of National education, the trustees must keep the house, furniture, &c., in repair.

How these are managed.

Both of those classes of schools are under the control of local patrons or managers, who have the right of appointing the teachers, subject to the approval of the Board, and of removing them of their own authority. These local patrons or managers must observe the rules established by the Board, who appoint "Inspectors" to visit all the schools, at least three times in each year, and to report to them on the management and condition of the schools. When the rules of the Board have been complied with, certain sums are paid to the teachers as salaries, and such further remuneration as the Commissioners consider necessary for the teachers must be raised by subscription or by school-fees. Books, &c., are supplied, at reduced prices to both classes of schools.

In the autumn of 1857, the number of National Schools was 3350, of which 1669 were "vested," and 3681 "non-vested."[1]

The rule as to Religious instruction.

One distinction between "vested" and "non-vested" schools is this:—As the "vested" have been established chiefly at the cost of the State and community, the Board requires that persons of every religious denomination attending *them* shall have a right to receive, *within the schoolrooms*, at times set apart for the purpose, such Religious instruction *as their parents may provide for them.* In "*non vested*" schools, which have been built by private funds, the local managers may refuse this right, if they please, to persons of a different persuasion from themselves.

It will be observed that the sole point at issue here, is the right of private persons who have built schools entirely at their own expense, and have had the property of them vested in themselves, to deny the use of them as places for giving Religious instruction to the children of persons who dissent from their views of religious truth.

The Secular instruction distinct from the Religious.

In *all* these schools, the Secular instruction is kept entirely distinct from the Religious instruction of a denominational kind, including, n this term, the reading of the Bible. Throughout the 3350 schools n all parts of Ireland—and whether the school is attended by both Protestants and Catholics, or by Protestants or Catholics exclusively —sound Secular instruction is given for four hours every day. Not a book must be used, or a word spoken, during these four hours, by pupils, teachers, or patrons, which can give pain either to the reigious or political feelings of any person of any denomination. The rules of the Board contain ample provisions for protecting the rights of conscience, and these extend equally to "non-vested" and to "vested" schools. The patron of a "non-vested" school cannot force any child attending it to read the Bible or learn the Catechism of his own Church, during the four hours authorised for Secular eaching. The education given in both classes of schools is equally good, and equally free from all interference with religious liberty.

The effects of the system on the people.

These are the unquestionable facts regarding the constitution of the Irish System of National Education, and every candid person may judge of its probable effect on the people. No doubt, a large portion of the schools are not attended by pupils of both denominaions. In three-fourths of Ireland, where the poor are almost exclusively Roman Catholic, such mixture *is impossible.* Where the Protestant poor are numerous, and the Catholics also are numerous, no force, no wisdom, no liberality could induce the clergy, or even the parents, to abandon, all at once or in a few years, the practice of having separate schools conducted by the clergy of their own persuasion; and hence, in many instances, each sect builds its own "*non-vested*" schools, and gives its own Religious instruction in them, at hours separate from the four hours of Secular teaching.

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[1] The number in 1875 was 7267 National Schools; that is, of "Vested Schools," 2105; of "Non-vested," 5162.

The joint education of the sects increases.

But the education of different sects in one school is increasing every day; and although the justest rules will not render it universal in a year, or in twenty years, yet a really just system, accompanied by a really superior kind of teaching, will, in the end, prevail, *because it is the natural way to reach co-operation.* Let the rules and practices be sectarian and unjust, and endless discord will be the inevitable, because the natural, consequence of such arrangements. Under a just system, let there be two schools of different denominations in a parish, with a dunce as a teacher in the one, and a man of talent in the other, and let liberty of conscience be enforced, then children of both persuasions will, in the end, be found in that school which is best conducted.

The system easily misrepresented.

It is obvious that nothing is more easy than to *misrepresent* this system of National Education. All the schools are called "National Schools;" let an uncandid Protestant reporter, then, suppress all mention of the distinction between "vested" and "non-vested" schools, and he may proclaim that he found "National Schools" in which *only* the Roman Catholic religion was taught, and that this was done openly and unblushingly in the schoolrooms. Farther, by carefully omitting to mention the fact that he found other "National Schools" in which the Protestant religion, and no other faith, was communicated in the school-rooms, he might, without becoming chargeable with *direct* falsehood, convey the impression that the National system was grossly abused in favour of the Roman Catholics. But it is obvious that an untruthful Roman Catholic reporter might, with equal justice, make a similar complaint that the Board is teaching only pure Protestantism in "National Schools."

Efforts to increase "non-vested" schools.

It will be understood that the end to which recent efforts in Parliament have been directed is, not to discourage the system of "non-vested" schools, but to give to that portion of the system a more rigid sectarianism. The object is to abrogate that rule of the Board which, in "non-vested" schools, keeps the Secular distinct from the Theological instruction, and forbids the *forcing* of Roman Catholic Theology on Protestant children, and *vice versa.* There is only one apology for this audacious demand—owing to the "non-vested" system making over the majority of the schools to the management of particular Churches, and the separation of the great majority of the children being consequently an accomplished fact already, a complete change in the direction would not make matters much worse. But, though this may be an apology, it is not an argument; and it is to be hoped that the Commissioners will look upon the whole "non-vested" system as a provisional expedient, perhaps necessitated by present circumstances, but to be gradually liberalised and finally removed, not tightened and perpetuated.[1]

They should be discouraged.

2. THE EDUCATIONAL SYSTEM OF THE UNITED STATES.

(1.) *History of the State Schools of Massachusetts.*

The general character of the American system.

Similar principles have obtained similar success in the United States of North America. Although that country is characterised by a great variety of zealous religious sects, yet it has established *State* schools, supported by public taxation, and superintended by State-appointed Boards of Education selected from all sects. In these the *elements of Secular knowledge* and *of Universal Morality and Religion* are taught, but all Sectarian teaching is excluded, this being furnished by the parents and pastors of the children at separate hours; and *these schools, too, have succeeded.* They also have been opposed by sectarian men, and reviled as "infidel and godless;" but neverthless they have been successful, and are conferring invaluable blessings on the rising generation.[2]

At the present time (1841), no problem perhaps engages a larger share of the attention of patriotic minds than the question, To what

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[1] From the *Scotsman* of July 30, 1858, the last article on education written by George Combe. See his "Life," by Charles Gibbon, vol. ii. p. 360. George Combe died on August 14, 1858.

For the history and institutions of Irish education from the earliest times, see "Education in Ireland," by James Godkin (London: Saunders, Otley, and Co., 1862). For an account of the present state of Education there, see Kiddle & Schem's "Cyclopædia of Education," and Dr Rigg's "National Education," chap. vi. (London, Strahan & Co.).

See also an account of a visit made by George Combe to Ireland and to Archbishop Whately, and some interesting facts regarding Irish Education, in his "Life," by Charles Gibbon, vol. ii. p. 223.

[2] National Education, pp. 34–5.

Britain may learn from Prussia and America.

extent the Government of a country may legitimately prescribe and enforce measures for the universal education of its people. Prussia exhibits the example of an enlightened Government, forcing moral and intellectual cultivation on its subjects, by the unsparing exercise of despotic power. The free institutions of Great Britain render it impossible for us to imitate this example, even although it were proved by reason and experience to be beneficial. In the United States of America, again, we observe a democracy labouring to educate itself by the application of such means as are consistent with its own principles of rule. As the Government of Great Britain wields, to some extent, the concentrated power of that of Prussia, while it acts on elements resembling, in no inconsiderable degree, those of the American democracies, some useful principles of action applicable to our own country may be deduced from contemplating both.

The two chief features of the system of Massachusetts.

The history of education in Massachusetts may be briefly told. From the very infancy of the colony, two grand features stood forth on the statute book, which have never undergone repeal or modification—namely, that the benefits of a Common School education should be brought within the reach of every child in the State, however poor; and that the property of the State should support a number of schools sufficient to confer this boon.

Education as conducted by local, with no central, power.

This machinery, more or less modified, has been in operation, during two centuries, in Massachusetts; but, it will be observed that, although the schools have been supported by taxes levied on property, and managed by committees chosen by the people, no central directing or supervising power has existed. Every district has been permitted, to a great extent, to follow its own perceptions of utility in the management of its schools. It was assumed by the Legislature, that the dictates of self-interest would prompt the inhabitants to nominate the best qualified individuals as members of the school and prudential committees; and that feelings of public duty and responsibility would induce the committees to execute their functions in the best manner. The law gave the committees ample authority over the schools, and power to enforce the practical adoption of every measure which they conceived calculated to promote their efficiency. Yet, under this system, as we shall presently see, education declined, and remedial measures were loudly called for by the public.

The first improvement adopted by the Legislature was the foundation of a public school fund. It was enacted that, on the 1st of

A general "Common School Fund" established.

January 1835, a sum not exceeding one million of dollars (£200,000) should be permanently invested by the State, under the name of the "Common School Fund." It was derived from the sale of lands in the State of Maine belonging to Massachusetts, and from certain claims for military services on the Government of the United States. The statute ordained that the income of this fund should be paid over annually to the "towns," in proportion to the number of children between the ages of four and sixteen years, within the territory of each; but on the condition always, that the towns should, by taxes imposed on themselves, raise a sum annually equal to one dollar and twenty-five cents (5s. 3d.) for every child between those ages comprised in their population. If any town fail to levy this amount, it receives no share of the fund. The analogy between this regulation and that adopted by our own Government, of bestowing a certain amount of public aid in favour of schools, on condition that the inhabitants who apply for it shall contribute an equal sum themselves for the same purpose, will be at once recognised.

Restrictions issued on employing children.

An Act was passed in 1834, chap. 245, which provided, that children under fifteen years of age should not be employed in factories, unless they had attended school for "at least three months of the twelve months next preceding any and every year in which such child shall be so employed," under a penalty of fifty dollars for each offence, to be levied on the employer, to the use of the Common Schools in the town.

School libraries and apparatus provided.

The Legislature, by an Act passed in 1837, chap. 147, authorised school districts to establish and maintain libraries and apparatus for the use of the Common Schools; and to raise money from the inhabitants by taxation for that purpose, to an extent not exceeding thirty dollars the first year, and ten dollars in any subsequent year. This provision might, with great advantage, be imitated in Britain.

Board of Education and Secretary appointed.

The next step which followed was the appointment, in April 1837, of a Board of Education, with a Secretary. The statute of that year, chap. 241, establishes a "Board of Education" for the State. The governor, with the advice of his council, was authorised to appoint eight persons who, together with the governor and lieutenant-governor, *ex-officiis*, constituted the Board. The persons appointed hold their office for eight years; but one retires every year,

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[1] This was one of the conditions on which Grants were originally given to schools. It has since been variously modified, and is not altogether departed from, under the recent Acts of 1870, 1872, and 1878.

commencing with the person first on the list. The governor and council fill up vacancies occurring by death, resignation, or other causes.

Character of the first Board.

Governor Everett exercised the power of making the first nomination. We are informed by the *Common School Journal*,[1] that although himself a Unitarian and a Whig, he selected from both political parties (Whigs and Democrats), and from all the leading religious denominations in the State, men of talents, literary reputation, and philanthropy, residing in different sections of the country, and representing, as nearly as possible, equal portions of territory and population. They receive no remuneration for their labours; but their incidental expenses, and all charges incurred in the execution of their office, are defrayed by the State.

Horace Mann first Secretary.

The Board of Education, at its first meeting, appointed the Hon. Horace Mann, then President of the Senate of Massachusetts, to the office of Secretary,—a choice which, judging from the Reports named at the head of this article, appears to have been highly advantageous to the State. In these Reports, he exposes defects, urges their removal, and recommends improvements, with earnestness, persuasiveness, and sagacity.

The results of the previous system.

This representation of the results of the administration, for two centuries, of the Common Schools *by the people themselves*, without the aid of any controlling, advising, or enlightening central power, is highly instructive. It shows that, in conducting education, as in executing every other difficulty and complicated process, the blind are not adequate successfully to lead the blind. The example of Massachusetts is calculated to prove instructive to Great Britain, equally in those points in which her machinery for education has failed, and in those in which it has proved successful. The evidence afforded by the Reports, that the schools had degenerated, and that public education was rapidly declining under the management of mere local committees, is overwhelming and irresistible.

We shall now notice the effect of the remedial measures adopted by the Legislature. Although it instituted the Board of Education, and prescribed certain duties to be performed by them, it conferred on them no compulsory powers. Neither the Board nor the Secretary can direct the School Committees and Prudential Committees, who retain the entire management of the schools, otherwise than by the influence of reason and persuasion. The law provides that, if the towns do not raise the statutory sums for education, they shall be subject to a fine, and receive no share of the Common School Fund; but the execution of these provisions is committed, not to the Board and Secretary, but to the civil officers of the State. Machinery of a somewhat similar kind would be better adapted to Great Britain than the Prussian system; for the various sects into which this country is divided, would probably resist, as the people in America have done, the application of any compulsory measures to enforce public instruction.[1]

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[1] An educational organ, founded in 1838 by Horace Mann, and edited by him, for ten years, with eminent ability. Other journals of the same name have been published, such as the *Connecticut Common School Journal*, established by Henry Barnard, and admirably conducted.

The Board has at first no compulsory powers.

Let us trace, then, the measures adopted by the Board, and the success which has attended them. To rouse public attention to the actual condition of the schools, and to the means of improving them, the Secretary summoned Conventions of the friends of education in every county of the State, excepting Suffolk. By way of preparation for these county conventions, he drew up and circulated, throughout the commonwealth, a series of questions, addressed to the School Committees, for the purpose of drawing forth and concentrating information on the most important points connected with education. Written answers were received from the School Committees of nearly half the towns in the State; and, at the conventions, the Secretary delivered a lecture to the assembled citizens on the general subject of education and the schools, and afterwards the various topics suggested by the queries were publicly discussed.[2] Massachusetts is rent by powerful and bitter political parties; yet, to the credit of the people, the Secretary reports that, "neither at the conventions which have been held in the several counties, nor in the intercourse or correspondence with

Conventions of the friends of education summoned.

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[1] A law enforcing Compulsory Education was passed, in 1846, in the Massachusetts Legislature, on account of the rapidly increasing number of persons unable to read and write, whose "presence had always been regarded with distrust." Compulsion was adopted in the Scotch Act of 1872, and has been made more stringent by the Supplementary Act of 1878: its adoption was at first made optional to School Boards in the English Act of 1870, but it has been made peremptory in a Supplementary Act passed in 1878.

[2] The first Convention was held in 1837, when the Secretary, Horace Mann, gave an address on "The Means and Objects of Common School Education." Similar Conventions were held, and addresses delivered by the Secretary, till 1842, when they were repealed. These addresses are published in vol. ii. of his "Life and Works," edited by Mrs Mann, and should be read by all interested in education.

any one, has there been infused into this cause the slightest ingredient of partisan politics. In regard to this great subject, all have reverted to their natural relations as fellow-men, discarding strifes about objects which are temporary for interests which are enduring." This affords a valuable example to the opponents of National Education in the United Kingdom.

Annual Reports by the Board of Education.

The law requires that the Board of Education and its Secretary shall present, to the Legislature, an Annual Report of their proceedings, accompanied by such suggestions for the improvement of the whole educational system as may appear to them important. The first Annual Reports were prepared from the materials obtained from the answers to the queries, and the experience and observation of the Secretary and members of the Board at the conventions.[1]

The state of education.

They are minute and instructive, and unsparingly expose defects. The general results arrived at are: Apathy in the people, incapacity in the teachers, dilapidation in the schoolhouses, irregular attendance of the children, the absence of all system in the modes of teaching, and of uniformity in the books used; with the desertion of the Common Schools by the rich, in order to avoid that deterioration of manners and morals by which too many of them are characterised.

Remedies suggested.

The Board recommended an increase of the salaries of teachers—who then received less than the wages of common labourers—accompanied by the exaction of higher qualifications. They insisted largely on the improvement of schoolhouses, on the establishment of schools for training teachers, on the introduction of improved books, on the State allowing a pecuniary recompense to the individuals composing the School Committees, for the time they should bestow in the discharge of their duties, and on the exaction of more even efficient supervision of the schools.

Schools rapidly increase.

During the year 1840, "more schoolhouses have been erected than for ten years previous to 1838; and not only is the number greater, but many of them are admirable specimens of school-house architecture."

Improved education of the teachers recognised.

The public mind was awakened to the importance of education, and the deficiencies of the teachers were widely recognised. "There is scarcely a single instance," says the Secretary, "in the reports, where the School Committees speak with universal commendation of the teachers whom they have appointed." An improved education of the teachers is loudly called for. These facts afford strong evidence of the possibility of operating on the public mind, by means of an organised system and authorised functionaries, wielding moral powers alone; and, in this point of view, they appear to be instructive to ourselves.

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[1] These Reports are also contained in Horace Mann's "Life and Works."

The increased employment of female teachers.

In these Reports, another and rather singular fact is mentioned, which ought also to excite attention on this side of the Atlantic. "A change," it is said, "is rapidly taking place, both in the public sentiment and action, in regard to the employment of female teachers. The number of male teachers, in all the summer and winter schools, for the last year, was thirty-three less than for the year preceding, while the number of females was one hundred and three more. That females are incomparably better teachers for young children than males cannot admit of a doubt. Their manners are more mild and gentle, and hence more in consonance with the tenderness of childhood."[1] This statement is worthy of serious consideration in this country, where employment suited to women of cultivated minds and polished manners is greatly wanted.

The training of teachers begins.

Much as Massachusetts was suffering from the deficiencies of her Common School teachers, the State had, hitherto, made no provision for training and instructing schoolmasters. Amidst the general excitement, however, produced by the publications of the Board, a private citizen stepped forth and conferred on his country that inestimable benefit. Mr. E. Dwight, a merchant of the city of Boston, offered a gift of ten thousand dollars, on the condition that the State should grant an equal sum, to be applied to the institution of *Normal Schools*. The offer was accepted, and three excellent schools for the training of teachers are now (1841) in operation.[2]

The opposition encountered by the Board of Education.

We might have anticipated serious obstruction to the Board of Education from the political parties and religious sects, which contend for superiority in Massachusetts. Such, however, has not occurred. Fierce opposition, as we shall immediately show, did arise; but it emanated exclusively from the enemies of all public improvements. The real friends of the people, with admirable magnanimity, laid aside every prejudice, and joined cordially in promoting the general good. The Board reports, that "no sectarian or party interest has, in any single case, been manifested; and those attending the meetings have come together as on ground common to every good citizen. It may be regarded as by no means one of the least beneficial results of holding these conventions, that they unite, in an object of permanent and sacred interest, all those who, however alienated from each other in reference to other topics of public concernment, take a lively and a common interest in the welfare of the rising generation."

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[1] The employment of Female teachers has received a greater development in the United States than in any other country, and is a special feature of its education system. In 1876, out of 169,577 teachers in the States, 126,822, or about 74 per cent. were female; in Massachusetts 88 were female. See Kiddle and Schem's "Encylopædia of Education," *s.v.*, Female Teachers, for interesting remarks on the subject.

[2] In 1839, the first two Normal Schools in America were founded at Lexington and Barre in Massachusetts, in which there are now seven. There are now (1877) 137 Normal Schools in the United States; and 855 in Europe. See Kiddle and Schem's "Cyclopædia of Education," *s.v.*, Teachers' Seminaries.

The nature of the opposition encountered.

Every friend of education will recollect the bitter and inveterate hostility with which certain very moderate proposals, on the part of our own government, for the promotion of public instruction were received in both Houses of Parliament, under the influence, in some instances, of a purely fanatical, and in others, of an unyielding party spirit. We regret to observe that, even in Massachussets, where the people wield the supreme power, the efforts of the enlightened and philanthrophic members of the community in this great cause are obstructed. In that State, hostility to the Board of Education has been strongly and perseveringly manifested, not only through the medium of the press, but in the Legislature. One circumstance, however, attending it is consolatory. It has proceeded, not from religious and enlightened individuals who have attended the conventions, studied the reports, and watched the proceedings of the Board, and by these means become capable of forming a sound judgment on their merits; but apparently from persons who are hostile to all improvements in the public mind, and who consider their own influence in danger of being diminished, in proportion as that of reason and morality is increased. We are led to this conclusion by a statement of the Secretary, that the returns from the School Committees in general breathe no hostility to the Board; by the unsound and factious arguments adduced by the opponents in support of their own views, and by their proposing simply to abolish the Board, without substituting any better institution in its place.

The spirit shown as to the Religious instruction.

The Secretary's testimony to the spirit of the School Committees on the subject of Religious instruction is in these words:—"It will ever remain," says he, "an honour to the commonwealth of Massachusetts, that among all the reports of its School Committees for the last year, so many of which are voluminous and detailed, and a majority of which probably were prepared by clergymen belonging to all the various denominations in the State, *there was not one* which advocated the introduction of sectarian instruction or sectarian books into our Public Schools; while with accordant views—as a single voice coming from a single heart—they urge, they insist, they demand, that the great axioms of a Christian morality shall be sedulously taught, and that the teachers shall themselves be patterns of the virtues they are required to inculcate."[1]

(2.) *The Opposition to the Religious Teaching in the State Schools.*

The need of a National system under Government.

Much as the different sects may accomplish, each in educating the children of its own adherents, still a large number of the young will be left uninstructed, until the Government shall undertake the task. In the extent of its uneducated masses, Great Britain forms the opprobrium of Europe. There is no Christian country, nearly approaching to her in wealth, science, and industry, which has not established schools for the universal education of its people.

Sectarian difficulties have been overcome in Massachusetts.

We are unwilling to concede that, owing to the power of the Established Churches and the multitude of Dissenters, it is *impossible* in this country to accomplish a similar object. Obstacles nearly equal to any that present themselves here, have been overcome in the United States of North America. Among the citizens of the American Union, may be found the most ardent and zealous sectarians, and the most dogmatic and fiery politicians, each armed with constitutional power, by his votes, to give efficacy to his own will, and to counteract the designs of his neighbours. Nevertheless, in most of the States, the obstacles to public instruction have been surmounted; and Jew, Christian, and unbeliever unite in maintaining schools in which the children of all receive a highly, valuable, Moral, Intellectual, and Religious education.

Religious education given in the State schools there.

We say *Religious* education, because we have recently received a pamphlet from Massachusetts, which shows that Religious instruction is communicated in the Common Schools of that State; and a brief exposition of the extent to which it is carried will enable our readers to judge whether, compared with the profound ignorance in which so many of the children of our labouring classes are left, the Religious teaching in these schools is not a benefit of the highest order to the community; and whether similar schools could not be introduced with advantage into Britain. The pamphlet is entitled "The Common School Controversy," and was published in Boston, U.S., in the month of June, 1844. It presents in vivid, and we believe true, colours, a picture of the system of Common Schools now in operation in that State, and of the obstacles with which it has had to contend.

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[1] From article on "Education in America," in the *Edinburgh Review* of July, 1841; which became the basis of the Lancashire scheme, and of recent legislation on education. See pp. 586 and 590.

The controversy carried on regarding it.

The discussion to which the pamphlet refers originated in an attack, in the *Christian Witness and Church Advocate* of 23rd February, 1844, by the Honourable Edward A. Newton, of Pittsfield, on the Board of Education and its Secretary, for not teaching "orthodox Christianity" in the Common Schools. This newspaper is the acknowledged organ of the Episcopalians in Massachusetts. The opinions of Mr Newton were espoused and defended by the editor, and were therefore regarded as generally entertained by the members of this highly respectable and influential sect. The attack led to a defence of the Common Schools by the Secretary, the Honourable Horace Mann, a rejoinder by Mr Newton and by the editor of the *Witness;* and, subsequently, to a very able, temperate, and instructive "controversy" in the public press, by men of all parties and sects, in which the terms and interpretation of the law establishing Common Schools, the institution of the Board of Education, and the working of the system itself, are pretty fully expounded and very freely discussed. The result is a concurrence of orthodox men, of the highest standing, with Unitarians and other Liberals, in a strong and decided approval of the system of Common Schools as actually administered; the Episcopalian, Mr Newton, and the *Witness*, standing alone in its condemnation. It is cheering to read the cordial and sincere testimony borne by men of one religious sect to the excellent qualities of individuals of other denominations, who differ from them on the most important points of Christian doctrine; and, still more so, to see that, amidst all these differences, the best of men of every sect have found it possible to co-operate in the great cause of Public Education.

Its general results.

We shall glean a few of the facts and opinions, which, being of general application, may interest our readers; and only regret that the length of the discussion prevents us from presenting the "controversy" entire.

The grand object of the "controversy," however, is, What, in conformity with law, may be taught in these schools in the name of Religion? On this point, the "Constitution" of Massachusetts requires that all children shall be taught "the principles of piety, justice, and a sacred regard to truth, love to their country, humanity and universal benevolence, sobriety, industry and frugality, charity, moderation and temperance, and those other virtues which are the ornaments of society, and the basis upon which a republican constitution is founded." The "Constitution" goes no farther in specifying what things may be taught; but, by the laws of the State, the School Committees are authorised to prescribe the books which shall be used in the schools, under the restriction that they "shall never direct to be purchased or used, in any of the town[1] schools, any school-books which are calculated to favour the tenets of any particular sect of Christians." This prohibition was *first* enacted in 1827; but, in 1835, when the statutes were revised, it was retained and re-enacted by "an almost unanimous vote in both branches of the Legislature." It was the execution of this clause which gave rise to the "controversy."

The Religious instruction required by law.

The Bible is allowed to be read in all, and is actually read in nearly all, of the schools, and, of course, whatever *it* teaches is taught. But the editor of the *Witness*, in the name of the orthodox Episcopalians, puts the question, "What says the law? It prohibits the teaching of those things 'which favour the tenets of any particular sect.' Well, of what *particular* sect does it favour the tenets to teach that 'God was in Christ reconciling the world unto Himself,'—that 'we are by nature children of wrath,'—that the 'blood of Jesus cleanseth from all sin,'—and that 'by grace are we saved through faith?' Are these truths, which are the sum and substance of the gospel, distinctive of any 'particular sect?' No, thank God, they are the common ground of the great body who profess and call themselves Christians. To teach anything *less* in the name of Religion is sectarian, for it must be the tenet of some particular sect, and not of the Church universal." The Honourable Edward A. Newton supports this argument by stating, that the orthodox denominations made together "at all times, and now make, *nine-tenths* of the populations of the commonwealth."

Objections taken to the Religious instruction given.

The Secretary to the Board of Education made a twofold answer to this argument—1st, He presented a numerical statement of the religious denominations, who are all taxed equally to support the schools, and each of which has an equal right with its neighbours to

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[1] In the United States, "town" or "township" means one of the districts into which the country is divided for administrative purposes, civil and educational, with an average population of from 2000 to 3000. The term is so used in the fourth paragraph after this one.

The numbers of sects in Massachusetts.

prevent doctrines from being taught in them which it considers to be unsound. "The population of the State," says Mr Mann, "is now about 750,000. One-tenth is 75,000. The Universalists alone are estimated at nearly or quite this number. The number of Unitarians may be somewhat though not very much less. The *Christ*-ians have between twenty and thirty organised societies. While there are very few orthodox people belonging to Unitarian congregations, it is well known that there is no inconsiderable number of Unitarians who worship with the orthodox. The opinion of some of the best informed men is, that at least *one quarter* of the people of Massachussetts are what is called, by way of distinction, Liberal Christians. Some estimate the number at one-third. Then there are the Nothingarians and Deists, who, taken together, are probably more numerous than either of the above."

Defence of the Religious instruction given.

2nd, Mr Mann adds: "You insist that in our Public Schools, established for the whole, and supported by taxes levied upon the whole, certain scriptural doctrines shall be taught, such as that 'God was in Christ reconciling the world unto Himself,' &c. Very well. The Bible is now read in all our schools, almost without exception, and, in the great majority of cases, it is read by the scholars themselves. These doctrines and declarations being in the Bible, are they not in the schools also?" Farther, "under the provisions of the Constitution and laws, children may be taught to love the Lord their God with all their heart, and their neighbour as themselves; they may be taught to do to others as they would be done by; to do justly, to love mercy, and to walk humbly with God; they may be taught to visit the fatherless and widows in their affliction, and to keep themselves unspotted from the world; they may be taught to honour father and mother; to keep the Sabbath holy; not to steal; not to kill; not to bear false witness against neighbours; not to covet. Nay," continues Mr Mann, "I refer you to that awe-inspiring description of the judgment in the 25th chapter of Matthew, and I say that there is not a single *action* or *omission* there mentioned, for which the righteous are to be rewarded and the wicked punished, that may not be taught, inculcated, or warned against, in all our schools. Such, also, I know to be the opinion of the Board of Education. Are all these things and everything else of a kindred character, which the Scriptures contain, *non-essentials* in Christianity? But perhaps you desire something more for the schools? Perhaps you desire, not only that these passages (those quoted by the *Witness*) should be read, but that certain articles of faith, or formularies, more or less in number, embodying these passages in a manner more acceptable to you than is found in the original texts, should be taught with them?" This is what is prohibited by the law.

The general agreement with this teaching.

Mr Mann continues—"I have now received more than a thousand reports from the School Committees of the respective towns (districts) in the State, detailing the condition and wants of the schools. Probably a majority of them were written by clergymen. In these reports, no subject has been more freely discussed than that of Moral and Religious instruction, and how far the latter might be carried without trenching upon the rights of individuals; and, with only two exceptions,—less, therefore, than one in five hundred—the voice of these Committees has been unanimous in favour of our Constitution and laws on the subject of Religious instruction, as they now stand. Every one of their reports, also, was accepted in open town meeting, and therefore must have received the sanction of the town whence it came."

Demand for additional doctrinal instruction.

The editor of the *Witness* replied, that the precepts of Scripture cited by Mr Mann, as allowed to be taught, "are very well so far as they go; they are important to the social uprightness and welfare of man; but they leave untouched what we and all orthodox Christians esteem the essentials of Christianity—the way of salvation by Jesus Christ. We will not be diverted," says he, "from the great question, whether the exclusion of what is distinctive in Christianity, as a way of salvation, from our Public Schools, be not an unchristian measure which orthodox Christians ought to observe and think of."

These quotations contain the substance of the topics brought under discussion in the "controversy;" and we shall now cite the opinions of several orthodox men of high consideration, on the merits of the question, whether the orthodox views should, or should not, be taught in the Common Schools.

Sectarian tenets not to be taught.

The law relative to Religious instruction in the Common Schools of Massachusetts shows, that the main feature of the enactments on this subject is the prohibition to "purchase or use, in any of the town schools, any school-books which are calculated to favour the tenets of any particular sect of Christians." We proceed to cite the views of this prohibition entertained by some of the first citizens of the state.

The Hon. Alfred D. Foster writes as *follows*: "I am a decided believer in the doctrines of grace, as held by orthodox evangelical

Defence of their exclusion from schools.

Christians. In them, to me, are the spirit and life of the Gospel—on their truth, rest my hopes of heaven. I must teach them to my children, for, in my opinion, it is through love and obedience to them that my children, as well as I, must be saved, if saved at all. But have I a right to insist that they shall be taught to my children in a school supported by me only in common with those whose faith is different from mine, and to whom my faith is both a stumbling-block and a foolishness? I say no; and I think the laws and common sense say, and should continue to say, no. My next-door neighbour feels a deep interest in the cause of Common School education; he is active in promoting it; he pays as much towards it as I do (though this last circumstance is of no consequence); he desires good morals to be taught, and many of the great religious truths which I hold: but the Trinity, man's depravity, the atonement, spiritual regeneration, to me realities of Revelation or of consciousness, are to him, not truths but imaginations. I wish we might see eye to eye; I may properly, with kindness, show him my reasons for my faith, and urge them upon him; but I do not feel any more that I have a right to compel him to have his children taught those doctrines in school, than he has a right to compel me to have my children taught the doctrines of Socinus, which I regard as wholly unsupported by Scripture, and feebly by reasoning. What, then, can we do? We can meet where the Constitution and the laws allow us, on all common ground. Where we differ, we can peaceably separate and teach our children, or procure them to be taught, what we believe to be Religious truth. The means are at hand in our families, in Sunday schools, from the pulpit. This, I think, we ought to do. And when so much is to be done which all agree in thinking desirable, I regret exceedingly that obstacles should be thrown in the way of doing it, because our own religious views cannot be taught. Such seems to me the effect of a course like that of the *Witness.*

How they should be taught.

The need of helping the system.

"The Board of Education, and its Secretary, are earnestly endeavouring to do a great and good work for the people, by stirring up the people to work for themselves, wisely and energetically. A debt of gratitude is due to those gentlemen for the results of their labours thus far—seen, as those results are, in improved school-houses, in the increased amount of money raised for schools, in the interest felt in them, and *in this very opposition to the course they are pursuing. While the schools were running down in houses, instruction, and morals, who raised an alarm for their orthodoxy?* Now that they are coming up, let us help, not hinder, their progress, and have no fears that sound learning, good morals, or good manners, will lead to heresy or spring from it."

The same gentleman addresses a letter to the Hon. E. A. Newton (who was the first to lead the attack against the Board of Education), in which he says—"I readily accord to you the purest motives, and really suppose you desire only to contend for truth. I ought to believe this, if I may judge from the very pleasant acquaintance and intercourse I have had with you; and, so far as the great doctrines of the Gospel are concerned, I do not suppose that we differ as to what is truth or its importance. But you or I err greatly as to the manner of advancing the truth through Common Schools.

The case put for the two systems.

"If you are right, then our Common Schools must become the battle-ground of warring sects, each fighting to advance its own views, for the reason, that except those views prevail, all that is learned will be useless, if not positively injurious. If I am right, then we may find, in our Common Schools, one blessed spot which is truly neutral ground, where each sect may lay aside its weapons of offence, and all drink together from fountains of knowledge, refreshing to the soul, though they do not sanctify it. If you are right, then ignorance is better than knowledge uncombined with our peculiar views of religious doctrine. If I am right, ignorance is never better than knowledge, anywhere, nor with any religious opinions."

The causes of the broader thought on the subject.

Nothing can surpass the excellence of these sentiments and their beneficent tendency. They breathe the spirit of real Christianity, as well as of philosophy and patriotism. We rejoice to remark, that other orthodox men are animated by the same admirable principles. Such sentiments as these, publicly expressed by men entertaining extreme differences of opinion on religious doctrine, are refreshing and highly encouraging to the genuine philanthropist. And what has produced this admirable and truly Christian spirit, in a community which exists in a state of habitual and high religious and political excitement? It is the perfect equality of all sects in religious privileges and political power. The pride of domination engendered by national establishments of religion deadens the just and generous affections, in all but the highest minds in their communion; while the sense of injustice, oppression, and exclusion, is constantly irritating those who are compelled, by conscientious views of truth and duty, to separate from the church established by law.

In this country, the necessity of a National and efficient system of education for the universal people is becoming every day more and

This system recommended for Britain.

more apparent and pressing. It will be impossible to realise it, except on principles of equality similar to those in operation in Massachusetts. If such a system as that of Massachusetts were tried in this country, in which all sects should be taxed equally for the support of schools, all sectarian doctrine should be excluded, and all sects rendered equally influential in the administration of the schools and school funds; then, unless we acknowledge ourselves far inferior indeed to the Americans in virtue and understanding, the scheme should succeed here as well as there.[1]

3. THE PRUSSIAN SYSTEM OF NATIONAL EDUCATION.

The school administration of Prussia.

Prussia also has set a noble example to Europe on the subject of education. In Prussia,[2] as in Germany generally, it is obligatory on all parents to send their children to school, from the age of seven to fourteen, beginning earlier if they choose; and the duty is enforced by penalties. Each parish is bound to support an Elementary school; each considerable town, a Burgh school, for the more advanced studies; each considerable district, a Gymnasium, for classical studies; and each province has its University. The parish school is supported by the parish, and for its management all the landholders and heads of families are formed into a union, which appoints a committee to inspect and watch over the school.

The system of instruction prescribed.

The system of instruction is prescribed by authority, and is nearly uniform for the whole monarchy. It embraces, in the ***Elementary*** schools, (1) Religion and Morals; (2) The German tongue; (3) Elements of Geometry and Drawing; (4) Arithmetic, pure and applied; (5) The elements of Physics (meaning Chemistry and Natural Philosophy), General History, and the History of Prussia; (6) Singing; (7) Writing; (8) Gymnastic exercises; (9) "The more simple manual labours," by which seems to be meant, the use of tools employed in the most common occupations, such as the spade, pick-axe, saw, plane, file, trowel, stone-chisel, &c. The Burgher school embraces the same branches carried farther, with the addition of a little Latin, the study of which is not, however, universally enforced. The instruction is not gratuitous, except to the poor.

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[1] On National Education and the Common Schools of Massachusetts, which appeared originally in the *Scotsman*, and afterwards in a pamphlet, in 1845. For an account of American Education, see Francis Adam's "Free School System of the United States" (London, Chapman & Hall, 1875); Siljeström's "Educational Institutions of the United States," translated from the Swedish by Frederica Rowan (London, John Chapman, 1853); Dr Rigg's "National Education" (London, Strahan & Co.); Kiddle & Schem's "Cyclopædia of Education," *s.v.* United States; and the works mentioned there.

[2] *Edinburgh Review*, No. 116.—(G. C.)

The provision for its maintenance.

The provision to be made by the parish embraces,—1st, A salary to the schoolmaster, with a retired allowance for him in old age; 2d, A schoolhouse, well aired and heated; 3d, Books, maps, models for drawing, collections in Natural History, gymnastic apparatus, &c.; 4th, Aid to poor scholars. The fund is raised by contributions, levied on the inhabitants, according to the amount of their property or the produce of their industry, and by moderate fees, which are not paid to the schoolmaster, but to the parochial managers.

The supervision of the schools.

There are Cantonal courts, and inspectors, who control and inspect all the schools in a canton; others for Departments, with a wider authority; others, with still more extensive powers, for the provinces; and, above all, there is the Minister of Public Instruction. In all the courts, councils, or commissions, exercising authority over the schools of any class, there are a few of the clergy,—Protestant and Catholic being admitted according as the scholars belong to the one or the other church; and great care is taken to prevent the slightest offence being offered to the religious feelings of any party.

Other elements in the system.

The choice of the books in the Elementary schools is left to the local committees. There are half-yearly examinations; and the boys leaving school obtain certificates of their capacity and their moral and religious dispositions, which must be produced when they go to the communion, or enter into apprenticeship or service. The Prussian plan embraces also what are of essential importance, schools for training persons to act as teachers. There are thirty-four of these Seminaries,[1] where, besides studying the different branches of knowledge to be taught, the pupils learn also the art of instruction.[2]

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[1] This was in 1848. In 1875, there were 101 Normal Schools in Prussia, and 73 in the other German states. These are called "Teachers' Seminaries" in Germany, Russia, Denmark, Sweden, Norway, and German Switzerland.

[2] Popular Education, p. 34. The above account of the Prussian system is quoted by Professor Hodgson in the fourth edition of Horace Mann's "Educational Tour" (London: Simpkin, Marshall, & Co.), as "clear and succinct." Fuller information will be found in Victor Cousin's "State of Public Education in Prussia," translated by Sarah Austin (London, 1834); Matthew Arnold's "Schools and Universities on the Continent" (London, Macmillan, 1868); Dr Rigg's "National Education," chap. iv. (London, Strahan & Co., 1873); Henry Barnard's "National Education in Europe"; Kiddle & Schem's "Cyclopædia of Education," *s.v.* Germany.

4. NATIONAL EDUCATION IN SWITZERLAND.

The following account of the Swiss system of National Education was given by George Combe in a letter to Lord John Russell, dated 30th December, 1854:—[1]

The educational system of Zürich:

Having visited Switzerland last autumn, and resided some time in Zürich, I made inquiries into the state of education in that Canton, and received some information, which, if it has not already reached your Lordship from other sources, may perhaps be interesting to you to know, as President of the Committee of Privy Council on Education.[2] My information was derived partly from public documents, partly from an accomplished Professor of the University of Zürich, and partly from a gentleman extensively engaged in commerce in that town; and, as I regard their statements as trustworthy, I respectfully beg leave to make the following communication.

I have experienced some difficulty in finding English terms by which to render exactly the technical descriptions of some portions of their school system, but I have endeavoured to use equivalent expressions, so far as this was in my power.

Its general administration.

In Zürich, the Legislature has placed Public Instruction under a Council of Education, whose authority extends over all the schools of the Canton, supported by the State, and also over the University, situated in the capital. The Council is selected by the people, and consists chiefly of laymen. Its head quarters are in the capital. It has jurisdiction over all the schoolmasters and professors of the Canton, and over the things taught, and the books read, in the schools. The Canton is divided into school districts; and there is a local board of superintendence, also elected by the people in each district, of which the clergyman of the parish is always a member; but the schools and teachers are, in no sense, placed under his authority.

Meetings of teachers required by law.

The teachers of each school-district are required by law to meet once a month, to read one or two essays, or communications, on subjects connected with education and schools, and to discuss them. Reports of these meetings, containing the names of the teachers present, of those absent, and of the topics discussed, and the number of hours the meeting lasted, are sent to the Council of

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[1] The following is from MSS. See an account of the tour of which Switzerland formed part, in his "Life" by Charles Gibbon, vol. ii. p. 333. George Combe was on terms of the most friendly intercourse with Lord John Russell; see his "Life," by Charles Gibbon (Index).

[2] Lord John was President only from June 1854 to January 1855.

Education, and an abstract of these is published annually and circulated in all the school districts.

The classes of schools.

The schools consist of (1) Common Schools, divided into three classes, called "every-day schools," "repeating schools," and "schools for singing and secondary instruction;" (2) a Gymnasium; and (3) a High School, in which elementary instruction in the higher branches of education is given. The teachers are remunerated partly by salaries provided by the Canton, and partly by fees, which are very moderate.

Education is compulsory, but not all public.

Parents are required by law to send their children to school, and if they are not able to pay the fees, the parish does so. In the towns, there are private schools, and parents have the right to send their children to them, or even to educate them at home, if they prefer doing so; but, in both of these cases, the local board of education is authorised and required by law to ascertain by examination that the children are *de facto* educated, and that the law is not evaded.

The Religious instruction given.

The things taught in the Common schools are the ordinary branches of instruction, including Religion. The teacher gives lessons in Religion, but the clergyman is bound by law to assemble the school children belonging to his church twice a week, and to give them Religious instruction. He is regarded, both by the legislature and by the people, as chiefly charged with, and responsible for, that duty. The Religious instruction given to the children is Protestant or Roman Catholic, according to the creed of the parents.

Annual reports are issued.

The local School Councils are required to report annually to the Supreme Council the things taught in each school; the number of children in attendance on the books; the numbers who have actually attended and of those absent; the condition of each school, embracing its size, state of repair, furniture, &c.; the sums paid to the teachers; and other particulars. An abstract of all this information is made by the Supreme Council, printed, and circulated in every school district. In the Abstract Report for 1852–3, it is stated that 364 placed teachers, and 110 assistant teachers are employed.[1] The *condition* of the schools is described thus: "Very good, 120; good, 268; middling, 67; bad, 9."

The subjects taught.

In the rural districts, the attendance of the children is irregular, and the quality of the Secular instruction is low. Some of the more enterprising teachers possess apparatus, and give elementary lessons in Natural Science; but, generally speaking, the branches taught are almost exclusively reading, writing, arithmetic, and a little geography.[1] Religious instruction is given from the Bible and Catechism; but the Order of God's Secular Providence, as manifested through the medium of the qualities, agencies, and relations which He has bestowed on organised beings and inanimate substances, is omitted.[2]

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[1] In 1875, 573 teachers were employed in the Canton of Zürich.

The results of the system:

The Canton of Zürich, then, presents us with a republic possessing universal suffrage and universal education. The education is based on Religion, and is also provided, enforced, and superintended by the State, using the clergy, as well as the schoolmaster, as its instruments of instruction. What have been the results?

The general state of the people.

According to my information, this education has rendered the people, in ordinary times and circumstances, quiet, industrious, moral, and to a certain extent, intelligent. Compared with uneducated nations, it has placed them high in the scale of moral and intellectual civilisation.

The need of instructing in Physical and Social Science.

But this course of instruction, although the source of much good, and also adapted to the social condition of the Canton, at the time it was introduced, appears to be no longer adequate to meet the requirements of its present circumstances. The progress of discovery in the Arts and Sciences, the development of new ideas in Social Economy and Religion, and a greatly increased intercourse with foreign nations, have rendered it imperfectly suited to the altered condition of the people. Manufactures are extensively prosecuted in the Canton, and instruction in the elements of Physical Science is found to be desirable to fit them for the practice of the improved and more scientific methods now generally introduced into the arts. Moreover, it has left the people open to seduction, by the apostles of the wildest doctrines in Morals and Social Economy that have disgraced the present age.

This shown by the President's Speech;

In the opening speech, delivered on 30th August, 1853, by President Fries, to the School Synod of Pfäffikon, after vindicating the right of the school teachers to take an active interest in the religious discussions, and in the political and social organisation of the Canton, he proceeds: "A glance at the public life of our people will, however, cause your attention to rest, in the first place, on what is new and strange; and, especially, as you cannot fail to remark that, new and unusual as it is, it already lays claim to a certain degree of influence on all the affairs of life, and, in so far, really exercises it, as it involuntarily drags all other interests into its powerful stream. The social movement in our Canton operates at present in this way; and no one can know his own position in life, who is not previously thoroughly instructed as to his place and duty in this movement, especially seeing that it is openly avowed that the people are ready to take a direct part either for or against it—a fact which is well known to the body of teachers."

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[1] "Object lessons" are given in every school, and they receive more attention than in most other countries.

[2] See the kind of instruction here spoken of explained in chap. v. p. 123.

And the spread of Socialism.

I inquired what these sentences referred to were, and was informed that it was Socialism. The French Socialists, driven from their own country, had taken refuge in Switzerland, and many of them had settled in the Canton of Zürich. Finding a people capable of reading, and to some extent intelligent, but very little instructed in regard to the natural foundations of morals and social institutions, they preached to them, orally and through the press, the doctrines of the community of goods and the rights of labour; with such effect as to alarm the holders of property, and to astonish and confound the better educated members of society.

The need of similar teaching in Britain.

I have taken the liberty to bring these details under the notice of your Lordship, because they appear to indicate that even a general education of the people, sound and useful in many respects, but omitting the subjects so earnestly adverted to, and so well set forth by Lord Ashburton and the Dean of Hereford,[1] has not, in this instance, proved sufficient to ward off the influence of wild theories and subversive doctrines, even in a country enjoying so much political freedom, morality, industry, and prosperity as the Canton of Zürich. If this education has been found insufficient for a people possessing these advantages, perhaps your Lordship may be induced to consider whether the condition and circumstances of the working classes in Great Britain render the somewhat similar system of instruction generally followed here, adequate to guide them successfully to individual and social well-being.

Should your Lordship and the Committee of Council recognise any shortcoming in the British system of education, perhaps a simple

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[1] This refers to the subjects recommended by George Combe, and taught in the Secular and Birkbeck Schools—Physiology, Social Science, and the training of the Moral and Religious faculties in all lessons. See the chapter on the history of the Secular Schools, p. 201, especially p. 253 *et seq.;* also the chapter on Social and Political Science, p. 170, especially p. 193 *et seq.*, as to the history of its teaching in schools, and the opinions of the Dean of Hereford and others in regard to it.

How this may be secured.

means towards supplying the want might be found in making competency to teach the subjects recommended by Lord Ashburton and the Dean of Hereford a mark of merit, and a title to additional remuneration in the distribution of the funds placed at the disposal of the Committee of Council.[1]

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[1] For a fuller account of the Swiss system of education, see Barnard's "National Education in Europe;" Matthew Arnold's "Schools and Universities on the Continent," chap. xxi. (London, Macmillan & Co., 1868), and his "Popular Education of France," chap. xv. (London, Longmans); Kiddle and Schem's "Cyclopædia of Education," and works mentioned there.

PART SIXTH.

WHAT ARE THE QUALIFICATIONS OF A GOOD TEACHER?

THE CHARACTER, TRAINING, AND POSITION OF THE TEACHER.

PART SIXTH

CHAPTER I.

ON THE PERSONAL QUALIFICATIONS OF A GOOD TEACHER.

[illegible]

F Eventuality be large, and Concentrativeness deficient, the qualities of observation and narration may be possessed; but the narrative will resemble a description of figures in a panorama; it will be full of life, action, and incident, but deficient in unity and continuity: with Concentrativeness large, the story would more nearly esemble a regular drama. If Individuality be large, persons and instances may be remembered vividly by it, their relations in space by ocality and Order, and their causes and effects by Causality; but f Eventuality be deficient, extreme difficulty will be experienced in ringing together these items of information and presenting them in he form of a natural narrative.

A person in whom the combination now described exists, and n whom Concentrativeness is large, will feel strongly the desire f communicating the quality of continuity to his narratives; and n important occasions, he will produce it by successively writing lown all the elementary ideas of his subject, by arranging them, by filling up, and by striking out parts, until the whole hangs together with neatness and consistency. Such a combination will fit its possessor for studying Physical more successfully than Moral science; because action is the primary element of the former.

If Concentrativeness and Eventuality be both deficient, the literary or philosophical productions of the individual will be marked by omissions of important intermediate ideas; in his compositions, he will combine description with inference, without taking sufficient notice of modes of action; he will often wander from his subject. In short, he may display great knowledge of objects which exist, with profound reflection on their relations, and yet be unsuccessful in conveying to the minds of his readers or auditors philosophical convictions, similar to those which exist in his own mind. This will be owing chiefly to deficiency in the power of representing, or

Eventuality, modes of action, and of giving, by Concentrativeness, continuity to the thread of his discourses.

The qualities of a successful teacher.

Individuality, Eventuality, and Concentrativeness are indispensable qualities to a successful teacher. I have never seen a person capable of interesting children and exciting their intellects, who was deficient in both the first and the second organs. The manner of a teacher thus deficient in communicating knowledge, is vague, abstract, and dry, and altogether unsuited to the mental condition of the young. These three organs large, combined with large Philoprogenitiveness, Benevolence, and Conscientiousness, and an active Temperament, constitute the leading mental elements of a good teacher.[1] Sir George Mackenzie suggests that he should also be gifted with a mirthful disposition.[2]

The professions requiring the above faculties.

When both Individuality and Eventuality are large, the individual possesses two important qualities for general business. They confer that readiness of observation and talent for detail which are essential in the management of affairs. The lawyer so endowed is able readily to apprehend the details of his cases,—to recollect the principles of law, the dicta of legal authors, and the decisions of courts, as matters of fact, and to reproduce the whole in a connected narrative before a judge or jury. His power of applying principles to new cases depends on the Reflecting faculties; but although these be powerful, yet, if Individuality and Eventuality be deficient, he may feel great difficulty in preparation for a trial, and in the reproduction of his ideas. In point of fact, the most eminent practical lawyers, particularly in England, are distinguished by a great development of these organs. They are equally necessary to the public speaker, to give him a command over the *materiel* or details of his subject, and to enable him to set it forth clearly and naturally to his audience. I have observed them large also in emi-

[1] See *The Phrenological Journal*, vol. v. (1827-28) p. 620—(G. C.); in which Mr James Simpson, giving an appreciative account and criticism of Mr Wood's celebrated Sessional School in Edinburgh, communicates valuable hints on education, and enumerates the qualities of a successful teacher, viz., Benevolence, Love of Children, regulated Self-esteem, Tact (which comes from Intellect, Imitation, and Secretiveness), Language, Wonder, Hope, Ideality, Veneration, and Conscientiousness, on each of which he makes pertinent remarks as applied to teaching.

[2] *General Observations on the Principles of Education for the use of Mechanics' Institutions;* by Sir G. S. Mackenzie, Bart., 1836, p. 65—(G. C.) This work was a valuable contribution to education when it appeared in 1836, at a time when the philosophy of the subject was only beginning to rouse attention. It will well repay perusal.

The authors possessing them.

nent physicians; for, in the profession of medicine, prompt and accurate observation is one important element in success. Both of these organs are large in authors who acutely observe objects that exist, and also life, manners, and occurrences,—as Le Sage, Defoe, and Sir Walter Scott. They are essential to the composition of such works as *Robinson Crusoe* and *Gulliver's Travels*, in which a strong impression of reality is produced by a minute description of particular objects and actions. In the skull of Swift, the organs appear very large.

When they are small.

When both organs are small, and the organs of reflection are large, the individual will retain only general ideas, and will experience great difficulty in becoming learned; he may see, hear, or read many facts, but they will make only a faint impression, and soon escape from his mind; he will feel great difficulty in commanding, without previous preparation, even the knowledge which he possesses.[1]

Writing to Baron Stockmar on the education of the Prince of Wales, George Combe briefly sketches a man whose character and acquirements should be those of all teachers:

The character and acquirements of a good teacher.

The instructor of the Prince of Wales should be a man under forty years of age, whose mind is free from subjection to any sect or party, and who is more or less acquainted with all the Science of the day. The better he be acquainted with *new* scientific views and opinions, the more suited will he be for his important vocation. In the ages which are to succeed the present, Science will influence society far more generally and powerfully than it has ever done, and both Literature and Religion will act subordinate parts in the drama of life compared with it. This idea, if correct, carries in itself a principle which should never cease to influence the education of the Prince.

An important object in educating the Prince of Wales should be to lead his mind, from the first, beyond conventional and empirical maxims and opinions in Morals, Politics, and Religion, to nature.

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[1] System of Phrenology, vol. ii. pp. 99–101.—Dr Spurzheim, in treating of Eventuality, says: "It seems to me that this faculty recognises the activity of every other, whether external or internal, and acts in its turn upon all of them. It desires to know everything by experience, and consequently excites all the other organs to activity; it would hear, see, smell, taste, and touch; is fond of general instruction, and inclines to the pursuit of practical knowledge; and is often styled *good sense* in our proceedings. It is essential to editors, secretaries, historians, and teachers." Ditto.

The character and acquirements of a good teacher.

The first step in such a process should be to communicate to him a sound and practical knowledge of the human mind and body, the objects of their functions, and the laws impressed on them by the Creator. A mere metaphysician, theologian, or classical scholar, unlearned in Physiology and Natural Science, would be unfitted for the duty; while a mere Physiologist without Mental Science would be equally inadequate to the task.

Classical literature and History, when studied empirically, without the lights of Mental, Physiological, and Economical Science, are far more calculated to mislead than to improve and instruct the youthful mind. Every natural passion, and every exaggerated and erroneous sentiment, may in them find excitement and encouragement. It is only when they are brought to the tests of a pure Morality and a sound practical Philosophy that they become instructive; and then they afford examples of evils to be shunned, much more frequently than of good to be attained by following the principles which they describe.[1]

What gives genius for any work.

All the faculties possess instinctive activity, and they are capable of advancing a certain length in accomplishing the objects for which they were instituted, without the guidance of scientific knowledge or well-digested rules. This instinctive power is called Common Sense. A man endowed with a brain of ample dimensions and high quality, a favourable combination of organs, and an active Temperament is a genius; and, impelled by the instinctive power of his faculties, he is often able to accomplish great objects, whether in the departments of Literature, Science, Art, or practical life, without any scientific knowledge of the principles of what he is doing, and without being capable of communicating to other minds less gifted the power of producing the results which he has attained. Poets, artists, and musical composers afford striking examples of the truth of these remarks. But the assemblage of natural qualities, which, when exercised in these departments, is recognised as Genius, appears to us to have a wider range than is generally supposed. According to the special combination of the cerebral organs in an individual who is thus endowed, it may confer on one man a genius for money-making in mercantile business, on another a genius for conducting some special department of literature, on a third a genius for teaching, and so forth. By the word Genius, in these instances, we mean an instinctive sagacity which enables its possessor to take the right road to attain his object as if by intuition, combined with an active energy in pursuing it, which leads him on to success almost without conscious effort.[1]

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[1] Letter of 1st Nov., 1844. See his "Life," by Charles Gibbon, vol. ii. pp. 189–200. The whole letter deserves careful study.

The qualities possessed by Wilderspin.

In this category of characters we are disposed to place Mr Wilderspin. To an active Temperament and energetic quality of brain, he adds, large organs of Philoprogenitiveness and Benevolence, ample organs of Form, Eventuality, Individuality, Comparison, Tune, Time, Language, and Imitation; and, under the guidance of the instinctive power of this combination, not disturbed by antagonising qualities, he invented, carried into practice, and taught the system of Infant Training which bears his name. He latterly knew a little of Phrenology, so as to perceive the relation between it and his own practical methods of teaching and training; but we believe that he did not arrive at the knowledge of his method through its medium, having been guided solely by the instinctive impulses of his faculties, aided by observation and experience. He was in Infant teaching and training, what Raphael was in painting, and Shakespeare in poetry—a heaven-born genius.

The work done by him.

When he exhibited the results of his system and explained his method, the whole process seemed so simple, and recommended itself so directly to the Feelings and Understandings (the Common Sense) of the spectators, that it was universally admired, and pretty generally adopted. Money was raised by subscription, Infant Schools were built, teachers chosen, and children collected; and, under the immediate tuition of Mr Wilderspin himself, many schools were established with the most encouraging prospects of success.[2] But, somehow or other, while many of the schools have flourished, others have become languid: in the latter, the teachers have lacked energy and resources, the children have not been excited and influenced as they were by the founder of the system; and, in the localities of such schools, an impression has gone abroad that the scheme generally has failed.

On these facts, we observe that neither Mr Wilderspin himself, nor most of those to whom he communicated his system, were in possession of any scientific knowledge of human nature. The

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[1] See additional remarks on Genius, p. 276; and the subject fully treated in an essay under that name, in George Combe's "Essays on Phrenology" (1819).

[2] See remarks on Wilderspin's work in Scotland, and George Combe's connexion with it, in the Introduction, Part i. 4.

The reason of his non-success.

scheme emanated from, and was addressed to, our instincts or Common Sense. But genius when acting without the guidance of scientific principles, labours under two disadvantages: first, it is liable to shortcomings, errors, and inconsistencies in its practice; and secondly, it cannot communicate its method to ordinary understandings. Wilderspin, and men similarly constituted, succeeded up to a certain point in Infant training; but, when individuals who were deficient in the active Temperament, energetic quality of brain, and favourable combination of cerebral organs, which had inspired him, were employed to conduct the schools, and were thrown upon their own mental resources, they proved by no means adequate to the task.[1]

The value of scientific principles to the educator.

It is in such cases that the value of scientific rules becomes apparent. Clear rules, founded on well ascertained natural principles, not only serve to enlarge the sphere of genius, and to save it from numerous errors, but enable it to communicate its methods to average minds, and help these to work up to its suggestions, and to follow closely in its track. If Phrenology had constituted a fundamental portion of universal education at the time when Wilderspin appeared, his instincts would at once have allied themselves with scientific principles; a knowledge of these principles would have enabled the community at large fully to comprehend the *rationale* of his system; and his exhibitions would have become embodiments of these principles in practice. By this means, the public, and those who were selected as teachers, would equally have comprehended the condition of the infant mind and body, the objects to be aimed at in training them, and the real relations between the means employed and the ends aimed at. We are entitled, from experience, to infer that, in this and in other instances, men of average mental endowments would have been capable of repeating the processes and reproducing the effects. Archbishop Whately long since remarked, that no person, even the most illiterate, trusts to the dictates of Common Sense in the execution of any complicated process, when he happens to possess scientific rules for his guidance. The sailor, while he may approve of curing diseases under the guidance of Common Sense, would scout the idea of navigating a ship by its unaided illumination. It is sheer ignorance of Mental Science which leads so many otherwise intelligent persons to rely on the dictates of Common Sense, to the exclusion of scientific principles, in every department in which mind is the subject of administration; but this department, instead of forming an exception to the general case, is, of all others, that in which, from the subtle nature of the powers to be directed and the complexity of the phenomena, scientific knowledge is most necessary to success.[1]

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[1] Regarding Wilderspin and Infant Schools, see a short but good account in Gill's "Systems of Education" (London: Longmans, 1876), and Leitch's "Practical Educationists" (Glasgow: Macklehose).

The results of their want.

If there be truth in these remarks, they are equally applicable to the practical processes by which ordinary schools, lunatic asylums, and prisons are conducted. Several of these institutions have been brought into an admirable state of efficiency by men of peculiar talents, in some instances aided by Phrenology, and in others relying chiefly on their instinctive sagacity and experience. But we have heard of two great difficulties being experienced in maintaining their high condition: first, that of obtaining servants capable of comprehending the principles on which the presiding mind acts; and, secondly, when that guiding mind is removed by death or other circumstances, that of discovering a successor qualified to carry forward his ideas. We have been told by the master-spirits of improved prisons and lunatic asylums, that they find it more troublesome to instruct, manage, and direct their assistants and servants than their prisoners and patients; long cherished belief in the efficacy of force, and want of all knowledge and experience of the relation of force and of kindness respectively to the human faculties, render untrained servants absolutely sceptical of the influence of reason and humanity, while prisoners and patients speedily feel their softening and subduing power.

The effects of their possession.

We cannot doubt that instruction in Phrenology would remove or greatly lessen these evils.[2] A knowledge of the primitive faculties, their modes of activity, and the effects of their combinations, communicated as elements of education to all classes of society, would enable each of these successful improvers to place his method on a precise scientific basis which could be communicated to hundreds; giving to average minds the power of executing, and, when necessary, reproducing it, not empirically, but with intelligence and a clear perception of the relation between means and end.[3]

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[1] See p. 638, on Common Sense in education.

[2] See Phrenology further recommended to teachers, p. 644; and to mothers, p. 61.

[3] *Phrenological Journal*, vol. xix. (1846) p. 233, in an article on "Why are Infant Schools languishing?" in which the subject is well and practically treated, and the differences between "rational and irrational" Infant Schools are pointed out.

CHAPTER II.

ON THE PROFESSIONAL TRAINING OF THE TEACHER.

1. COMMON SENSE NOT A SUFFICIENT GUIDE IN EDUCATION.

Common Sense insufficient for any professional work.

IN the exercise of nearly all their high elective, legislative, and administrative functions, the people and their rulers generally proceed on the mere dictates of Common Sense; and, as Archbishop Whately has well observed, Common Sense is never recognised as a sufficient guide in the management of important affairs, except when the individual is ignorant of scientific principles of action. A sailor will probably admit that Common Sense is sufficient to enable a man to preach or to practise medicine, but he will deny that it is adequate to the steering of a ship. He knows little of the difficulties of preaching and practising the healing art, and therefore believes that slender attainments will suffice for them; while he is intimately acquainted with the perils of navigation, and justly decides that scientific knowledge and experience are both indispensably necessary to render a man an accomplished navigator. Instinct does not guide man as it does the lower animals; and reason cannot act without extensive knowledge and laborious training. The education of the American people being still essentially defective in relation to their powers and duties, their institutions, when seen in action, do not render justice to the wisdom which framed them. A higher education, discipline in obeying the natural laws under the sanction of religion, and practical moral training, appear to me to be the remedies for these evils.[1]

It is specially insufficient in education.

Most of you will probably acknowledge the advantages of education, point to your Common Schools, to the large sums appropriated by the States for public instruction, and ask what more can any reasonable man desire? With every feeling of deference towards your learned men and divines, I would answer that you stand in need of a Philosophy of Mind capable of guiding your steps in your efforts to bestow education on your people. Many will say,—Is not Common Sense sufficient to enable us to manage with success both our political and educational institutions? I repeat the observation of Archbishop Whately, that men never acknowledge the sufficiency of mere Common Sense to the accomplishment of any important undertaking, when they fully understand its nature and the difficulties that must be surmounted to ensure success. A blacksmith will probably assure you that Common Sense is sufficient to enable you to farm, if he knows nothing about farming; but, if you ask him whether Common Sense will enable you to shoe a horse, he will unhesitatingly answer that, if you try the experiment, you will probably get your brains kicked out for your rashness and presumption. Do you imagine, then, that the successful direction of the affairs of a great nation, and the training of the human mind, demand less of scientific skill and experience than shoeing horses?

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[1] America, vol. iii. pp. 268–9.

Common Sense truly involves *a* theory.

But allow me to ask, what do you understand by Common Sense, which is supposed to be such an all-sufficient guide in the United States? What is called Common Sense means the notions which have entered the mind of any individual, from such occurrences and sources of information as he happens to have enjoyed. Men's capacities differ, their opportunities of observation differ, and hence their Common Sense differs. The individual who professes to have no theory, no hypothesis, no system, but to follow plain Common Sense, has a theory: it is that formed by his innate capacity, aided by his own individual experience.[1]

This theory is imperfect without Mental Science.

Every man is willing to trust Common Sense in whatever is not intimately connected with his own immediate employment; but in that he sees the absurdity of such dependence. So in the business of Education: every man thinks Common Sense all-sufficient, and each calls his own notions of the matter Common Sense. No need of the Philosophy of Mind, they imagine, for the mother and the teacher; that is, human nature can be trained in ignorance of its true nature!

But, in fact, every man, whose business is to deal with the human mind, has a system of Mental Philosophy of his own, according to which he decides and acts. It may be a very imperfect system; he may not recognise it as a system; but still it serves him as one, and by it he tries whatever questions may arise in which mental acts or processes are involved. In this case, such men, in lack of a standard of Mental Philosophy, takes himself as a standard; but there can be no agreement as to the true mode of education until we have a system of Mental Philosophy on which we all agree.[1]

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[1] America, vol. iii. pp. 405–6.

2. THE NEED OF TEACHERS BEING INSTRUCTED IN MAN'S CONSTITUTION.

To train the faculties, they must be known;

The grand difficulty of conducting education is that teachers and parents are ignorant, and society has formed its institutions in ignorance of human nature.[2]

To be able to convey instruction, the teacher must himself possess an accurate knowledge of the functions of the faculties, and the different periods at which they are developed. When he sees manifestations in a child particularly powerful, he must know to what faculty these belong, and the particular class of objects or of studies fitted to cultivate this faculty into permanent energy and activity.[3]

In their spheres of action;

In order to train the faculties properly, we must know what they are, what their spheres of action are, and what objects are calculated to rouse them; and we must present *these*, for *words* do not train.

The object of education is to modify the innate powers, and to regulate their manifestations, to restrain such of them as may be too energetic, or to call forth into greater activity those which may be naturally languid. Before we can hope to conduct education to advantage, we must acquire a knowledge of the innate dispositions and capacities of the mind, and learn, philosophically, the sphere of action of each faculty, and how far each is susceptible of being repressed or exalted.[5]

Education is intended to enlighten the Intellect, to train it and the Moral Sentiments to vigour, and to repress the too great activity

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[1] American Lectures, edited by Boardman, p. 365.

[2] From MSS.

[3] Essays on Phrenology (1819), p. 326.

[4] From MSS.

[5] Essays on Phrenology (1819), p. 308.

In the laws of their activity;

of the Selfish Feelings. But how can this be successfully accomplished, when the faculties and Sentiments themselves, the laws to which they are subject, and their relations to external objects, are unascertained? Accordingly, the theories and practices in education are innumerable and contradictory; which could not happen, if men knew the constitution and relations of the object which they are training.[1]

And throughout their whole range.

Is the mind a single power? or does it manifest a plurality of faculties? It is important to teachers to ascertain this point. If it is one power, then every kind of exercise cultivates the whole; if a plurality, you must cultivate each. If it is one power, you cannot give rest by alternating studies; if a plurality, you may. Cultivate all the faculties, says a teacher at Albany, by Composition; cultivate all, says a teacher at Hartford, by Mathematics and Arithmetic; cultivate all, says a teacher at Philadelphia, by reading fluently. If there be a plurality, each must be exercised by itself.

If, then, there be a plurality of faculties, it is important to the teacher to know what they are; that he may know how to excite them, and that he may cultivate them all.[2]

The knowledge necessary to point out the path of life;

The precept, "Train up a child in the way he should go," is admirable; but extremely little information is communicated concerning

1*st*, The *way* in which he *should* go; and,

2*nd*, The proper mode of training him to go in it.

To find out the first, we must know human nature and its relations clearly and precisely, as these display themselves in the institutions of society, and also the talents and dispositions of the child himself; because successful Training implies judicious dictation of the individual into his proper department of life, enlightened with all the knowledge that is necessary to enable him to discharge the duties of it well. Unfortunately, however, those who ought to train the child in the way he should go, in these respects are ignorant themselves.

And to train the child to follow it.

To discover the second, we must either have enjoyed extensive experience in teaching and training children, or have made this subject a special study,—neither of which advantages are generally enjoyed by the trainers of children. Farther, until the elementary qualities of the mind shall be familiarly known, it will be impossible to render the experience of one man in teaching thoroughly available to others; because vagueness and inconsistency will be unavoidable as long as practice is purely empirical, which education must continue to be until it shall be founded on the Philosophy of Mind. We repeat, therefore, that the first effectual step in the improvement of the mass of the people must be to communicate to them a knowledge of the science of their own nature with the duties resulting from it; and to teach them the mode of beneficially applying this knowledge in ameliorating their own condition.[1]

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[1] Constitution of Man, p. 300.

[2] From MSS.

The want of Mental Science the cause of the differences in education.

Before men can teach, they must know. There ought to be schools for instructing teachers; and of the things taught, the constitution of man should be considered the most essential. But before it can be taught, it must be known. It may be said that the Legislature could prescribe a system of instruction for youth which should come in place of a Mental Philosophy. This it could do; but it would doubtless be drawn up in accordance with Common Sense. The question is, how will such a system agree with nature! Each teacher will think his Common Sense equal to theirs. To do any good, to have any uniformity, we must penetrate to the very foundations of nature. That such a system is not generally acknowledged is evident from the vast differences of opinion which exist in the proper mode of conducting education. Go to Paris, to London, to New York, ask about any principle of Chemistry, and you will find perfect agreement. True, there are points on which chemists differ; but then, such points are a *terra incognita* in which science has not yet been reached. But ask men about Education, and you hardly find two to agree; nor, until we have a true Science of the Human Mind generally acknowledged, can there be such an agreement; nor, till there is such an agreement, can there be any united and well-directed efforts.[2]

Its necessity for the teacher.

Mental Science is now a department of Physiology, and the teacher of the Prince of Wales should be capable not only of instructing him in this branch of knowledge, but of directing his own treatment by its lights. It would enable the instructor to ascertain, on sure grounds, the Mental dispositions and capacities of the

[1] *Phrenological Journal*, vol. vi. (1829-30), p. 325.

[2] American Lectures, edited by Boardman, p. 365.

Prince in their relative degrees of strength and weakness, and to modify his training, &c., to the dictates of reason founded on that knowledge. In ordinary education, much prejudice, and occasionally some unsound morality, are instilled into the youthful mind by well-meaning instructors who are ignorant of the spheres of activity of the primitive mental faculties.[1]

Effects of ignorance of it on teachers;

In some of your academies, the talent for English Composition is supposed to be the most valuable attainment that can be communicated to the young; in others, Arithmetic and Mathematics are regarded as the best studies for developing all the faculties; while one female teacher assured me, in all seriousness, that the human mind is a blank, that all minds are alike in their native capacities, and that she can evoke whatever talents and dispositions she pleases. This is her theory, and she has practised on it for many years! You must have observed how the practices of teachers differ; you cannot suppose that each adopts his own method without some reasons for preferring it;—these reasons, however limited and lame, constitute his theory. In point of fact, they all have theories, and the vast differences in their notions prove that nature is not the author of them; because she is always consistent with herself, and gives one response to all. When we have studied nature, we agree. Hence, the great principles of Astronomy, Chemistry, Physiology, and of other branches of Natural Science, are no longer in dispute. But on the subjects of Morals, Religion, and Education, the diversity and conflict of opinion are boundless. Does not this indicate that our notions on these subjects do not yet rest on a scientific basis?—in short, that we enjoy no sound and practical Philosophy of Mind?

And on the community.

In the present state of ignorance in which all classes, educated and uneducated, are involved, concerning the mental constitution of man, and the relation betwixt his faculties and the physical laws of creation; it is impossible to arrive at first principles, and from them to deduce demonstrative conclusions on any subject connected with the condition either of individuals or society. A philosophical exposition of the effects of the poor-laws, of the liberty of the press, of particular doctrines and practices in religion, of systems of education, and, in short, of any of the institutions of society, requires a precise and comprehensive knowledge of the constitution of the human mind, and of its susceptibilities of modification, as the ground-work of all our reasonings. Every attempt to remove prejudices, to convince the reason, or direct the feelings of the people, must be made in conformity to the natural constitution of the mind, and must reach its ultimate principles, in order to be successful; and yet that constitution and these principles are almost unknown. The consequence is, that, on no subject, is it so easy to embarrass discussions with plausible objections, ingenious sophisms, and successful ridicule; and, in no instance, is it so difficult to arrive at demonstrative conclusions as in Moral and Political Science.[1]

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[1] Letter to Baron Stockmar, 1st November 1844, on the Education of the Prince of Wales. See George Combe's "Life," by Charles Gibbon, vol. ii. p. 199.

3. PHRENOLOGY SPECIALLY RECOMMENDED FOR TEACHERS.

Phrenology a valuable guide in education.

Every one who has observed mankind must be convinced that nature has implanted certain dispositions and capacities in the mind, and that these form the basis of the character of each individual through life. The object of education is to modify these innate powers, and to regulate their manifestations, to restrain such of them as may be too energetic, or to call forth into greater activity those which may be naturally languid. Before we can hope to conduct education to advantage, we must acquire a knowledge of the innate dispositions and capacities of the mind, and learn, philosophically, the sphere of action of each faculty, and how far each is susceptible of being repressed or exalted. Phrenology is of great utility, as affording us such information; for it professes to treat of the innate faculties of the mind, and the modifications of which they are susceptible.

How it should be studied for practical success.

Phrenology teaches us emphatically that mere knowledge is not sufficient to secure virtuous conduct. It lays open to us the Propensities and Sentiments as the main-springs of human action, and proclaims, in the clearest language, that it is only by *Training them* that really virtuous dispositions can be cultivated. No means, therefore, that can assist the parent and teacher in Training can be unimportant. The most talented and zealous teachers have asked me, "How can we accomplish the training of the faculties most effectually?" They say, "We are aware of its importance, and we desire to train, but we experience much difficulty in doing so." I recommend to them to study profoundly the functions of the primitive faculties, their spheres of action, and the objects that excite them. This study must be serious, and the results of it must be made part of the stock of the teacher's mind. We cannot use knowledge,—we cannot teach it, nor impress others with it deeply—until our minds be saturated with it to overflowing. I relate this from experience. When in Edinburgh, I gave six lectures on General Anatomy and Physiology. I found it extremely difficult to produce a favourable effect on my audience; and I discovered the cause. Although I knew the subject, had seen the parts dissected and their structure demonstrated, and had read descriptions of them, yet this knowledge was all in the memory. It had not been wrought into the warp and the woof of my own thoughts. Phrenology has been thus *woven* in the very texture of my mind, and hence the greater ease and power with which I am able to interest other minds in its truths. Let other teachers become as familiar with it, and they will wield it as a powerful instrument in practising their vocation. When they have so studied Phrenology, they will discover that one branch of it offers them great assistance in Training, which to the uninitiated and the mere reader of Phrenology books, naturally appears ludicrous when first mentioned. I allude to the Natural Language of the faculties.[1]

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[1] *Phrenological Journal*, vol. ii. (for 1824–5) p. 445.

[2] Essays on Phrenology (1819) p. 308.

This shown from personal experience.

[See p. 61, on the value of a knowledge of Phrenology, in the education of children, to mothers and women generally; also, pp. 110–111, on the effects of teaching it to children. Many eminent teachers have recorded their obligations to Phrenology in the work of teaching. See Dr Howe's opinion of it, p. 122. Professor Hodgson of Edinburgh thus expresses himself in regard to it. "Of its importance to the educationist, I may speak, if with humility, yet with confidence, based on actual experience. To the practical teacher, Phrenology is of eminent service, not merely in enabling him to form rapid and correct judgments of individual characters, but from its clear and simple Philosophy of Mind, the light it throws on the *nature of the being to be instructed*, and consequently on the true aim and wisest methods of education."—*Phrenological Journal*, vol. xix. p. 127. See also the same Journal, vol. x. p. 110, for the

Recommendations of it by others.

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[1] From Address to the Boston (U.S.) Phrenological Society, Dec. 31, 1839. See p. 331, for observations of the use of the Natural Language of the faculties.

Recommendations of Phrenology for Teachers.

opinions of other teachers on its value to the teacher. At the same places in both the volumes mentioned, will be found the opinions of numerous eminent men as to its utility in various studies and professions. George Combe himself constantly and fervently attributes all his insight into human nature and education to Phrenology. See Introduction, Part ii., 4, on his use of the subject in education. *Edit.*]

4. ON SUBJECTS WHICH SHOULD FORM PART OF THE EQUIPMENT OF THE TEACHER.

Subjects necessary for the teacher: Mental Science.

To conduct education properly, it is necessary to know the physical and mental constitution of the being to be educated, and also the world in which he is to be an actor. Generally speaking, the former knowledge is not possessed, and the latter object is very little regarded. How many parents are able to call up, even in their own minds, any satisfactory view of the mental faculties (with their objects and spheres of action) which they aim at training in their children? How many add to this knowledge an acquaintance with the physical constitution of the human being, and of the kind of treatment which is best calculated to develop favourably its energies and capabilities? Nay, who can point out even a body of professional teachers who are thus highly accomplished? I fear few of us can do so.

I do not blame either parents or teachers for the present imperfect state of their knowledge: because they themselves were not taught; indeed, the information here described did not exist a few years ago, and it exists but to a very limited extent still. Ignorance, therefore, is our misfortune, rather than our fault; and my sole object in adverting to its magnitude is to present us with motives to remove it. While it continues so profound and extensive as it has hitherto generally been, sound and salutary education can no more be accomplished than you can cause light to shine forth out of darkness.[1]

Other sciences he should know.

The instruction and education of your children can be obtained only by a thorough education of your own minds. After you have become acquainted with Anatomy and Physiology, as the keys to the physical constitution of man; with Phrenology, as the development of his mental constitution; with Chemistry, Natural History, and

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[1] Moral Philosophy, Lect. vii.

Natural Philosophy, as expositions of the external world; and with Political Economy and Moral Philosophy, as the sciences of human action: you will be in possession of the rudimentary or elementary knowledge necessary to enable you to comprehend and profit by a course of lectures on practical education, which is really the application of this knowledge to the most important of all purposes, that of training the body to health, and the mind to virtue, intelligence, and happiness. I beg leave to express my humble conviction, that no error is more prosperous than that which leads many persons to suppose that, *without this preliminary or elementary knowledge*, parents can be taught *how* to educate their children successfully.

The necessity for these being studied.

The process of education consists in training faculties, and communicating knowledge; and it appears to me to be about as hopeless a task to attempt to perform this duty by mere rules and directions, as it was for the Israelites to make bricks in Egypt without straw. I am the more anxious to insist on this point, because no error is more common, in the practical walks of life, than the belief that a parent can learn how to educate a child without undergoing the labour of educating himself. Many parents of both sexes, but particularly mothers, have told me, that if I would lecture on Education, they would come and hear me; because they considered the education of their children to be a duty, and were disposed to sacrifice the time necessary for obtaining instruction how to discharge it.

This illustrated.

When I recommended to them to begin by studying Physiology, Chemistry, Natural Philosophy, and Phrenology, at least to such an extent as to be able to comprehend the nature of the body and mind which they proposed to train, and the objects by which the mind and body are surrounded, and on which education is intended to enable them to act,—they instantly declared that they had no time for these extensive inquiries, and that information about *education* was what they wanted, as *it* alone was necessary to their object. I told them, in vain, that these were preliminary steps to any available knowledge of education. They were so ignorant of mind, and of its faculties and relations, that they could not conceive this to be the case, and refused to attend these courses of instruction.

If I could succeed in persuading you of the truth of this view, the permanence of this Association,[1] and the success of its lectures, would be secured: because the industrious citizens of Edinburgh

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[1] The Philosophical Association of Edinburgh, now called the Philosophical Institution, before which George Combe was then lecturing (1835–6), and of which he was one of the founders. See Introduction, Part i. 1.

All sciences bear on education.

would prize it as a grand means of preparing their own minds for the important duty of educating their children, and would no longer come hither merely to be amused, or to pass an idle hour; they would regard every science taught by this Association as a step towards the attainment of the most important object of human life,—that of training the young to health, intelligence, virtue, and enjoyment.[1]

The subjects required for Physical training;

If you wished to instruct a person to conduct the physical training of your children,—that is, to administer their food, sleep, exercise, and occupations aright, with a view to developing their bones, muscles, lungs, stomach, nerves, and brain, into the highest attainable condition of health, vigour, and activity—what kind of knowledge of the bodily organism would you require him to possess? Common sense answers—He should know the structure of the different organs, that is, their Anatomy; their healthy functions, or their Physiology; and also the effects of disease on their modes of action, or their Pathology.

For Mental training:

Is it not the object of every sensible parent, in educating his child, to develop his natural Feelings and Intellectual faculties into full vigour and activity, to direct them to their proper objects, to restrain them when they act too vehemently, and to excite them when too sluggish? In short, to bring forth a healthy, vigorous, harmonious action, which, by insuring the proper discharge of our duties to God and man, shall shed a daily beauty over life; and also, through compliance with the laws of Providence, shall lead to health, prosperity, holiness, and happiness?

But if this be the just and rational aim of education, I humbly think that it takes for granted the following propositions:—*First*, that natural faculties exist; *secondly*, that they have all legitimate functions; and, *thirdly*, that the order of God's natural providence recognises and is constituted with obvious relation to the existence and legitimate uses of the faculties, because, as a general rule, it renders the honest, religious, intelligent, prudent, skilful, persevering and active man prosperous and happy, and the dishonest, profane, stupid, unsteady and sensual individual poor and miserable.

The Physiology of Mind.

If such, then, be the real condition of the human mind; you will observe that it *has a Physiology*, that its faculties have healthy functions and lawful spheres of action, which must be studied and understood by every one who pretends to conduct the Moral, Religious, and Intellectual education of our children.

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[1] Moral Philosophy, Lect. vii.

The Pathology of Mind.

The mind has also its *Pathology*, or its disordered and vicious, or immoral, states of action. This may arise from excessive energy in one or more faculties, with weakness in others, as when a man in whom the love of wealth is excessive, and the sentiment of justice feeble, cheats and steals; or it may arise from misdirection, as when a Turk, in honour of Mahomet, beats the soles of the Christian's feet, in order to convert him to his faith; or from inflammatory action of the brain, as when a person in a state of insane excitement kills those whom, when in health, he dearly loved. The knowledge of these disordered conditions also is necessary for conducting education successfully.[1]

5. ON THE NECESSITY OF TRAINING COLLEGES FOR TEACHERS.

George Combe's efforts for Normal Schools.

[George Combe, as already partly told in the Introduction, took the most active interest in the establishment of Training Colleges for teachers, as the "first step" towards making education what it should be, and persistently advocated their foundation in this country and America, from an early date. When he went to the United States in 1838, this was a prominent subject of his lectures there, and his earnest appeals no doubt did much to aid Horace Mann and other enlightened educationists in their final development in that country.

The first of these in Britain.

The first Normal School established in Britain was the one founded in Glasgow, in 1838, chiefly through the efforts of the celebrated David Stow, with Mr Robert Cunningham, an eminent and travelled teacher (see p. 89), as rector; which has been, since the Disruption, the Training College in connection with the Established Church in Glasgow. Of this institution, George Combe published an excellent account, with an engraving of the building, written, at his request, by Mr Cunningham, in the appendix to the third volume of his Notes on the United States, published in 1841. This account is interesting and valuable, as describing well the plan and working of the first British institution of the kind, which formed a model for the others since founded, and as containing a *résumé* of the system of teaching followed there.

In this paper, written in 1840, Mr Cunningham also recommends

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[1] From speech on National Education at Aberdeen, delivered on 25th April, 1851; from the *Aberdeen Herald*.

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[1] Moral Philosophy, Lect. vii.

the appointment of a Professor of Education in connection with Universities, which he had already advocated while in America in 1838-9, when professor of Ancient Languages in Lafayette College, Pennsylvania,—an idea that was first promulgated in this country by Professor Pillans, in 1828.[1] The paper is too long to quote here, but should be read by all interested in the subject.

The first in the United States.

The first Normal School founded in the United States was that at Lexington, in Massachusetts, (which State was the first to move in this direction,) in July, 1839, under the great teacher, Cyrus Pierce[2] as Principal, selected by Horace Mann; although a private training institution for teachers had been opened in 1823, under another eminent teacher, Mr Samuel Read Hall.[3] The struggle in favour of Training Colleges in the United States was long and trying, only three students having appeared at the opening of the Lexington school, and the opposition being very decided. "The assertion," as George Combe observes, "that the training of teachers was necessary, was resented by nine out of every ten of the actual teachers; and they found it no difficult matter to induce the parents of children to participate in their feelings."

Works on their history.

There are now 48 Normal Schools in Britain, 137 in the United States, and 855 in Europe. For their history in different countries, see Kiddle and Schem's "Cyclopædia of Education," *s.v.*, Teachers, Seminaries; and for the difficulties in their first establishment in America, see "The Life of Horace Mann," by his Wife (Boston: Walker, Fuller, & Co., 2d edit., 1865). A short account of the history of Normal Schools and George Combe's efforts in connection with them is given in the Introduction, Part III. ii. 4.—*Edit.*]

Their necessity for teachers.

The impediments in the way of extending a sound and truly valuable education to the people of America are very great. The first step towards accomplishing this end must be to institute Normal Schools for the instruction of the teachers, not only in the proper subjects to be taught, but in the best modes of teaching.[4]

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[1] See Introduction, Part III. ii. p. 4.

[2] America, vol. iii. p. 27.

[3] Regarding these two remarkable men, see Kiddle and Schem's "Cyclopædia of Education," and Barnard's "American Teachers and Educators."

[4] America, vol. iii. p. 27.

Their need seen in Massachusetts.

George Combe thus describes the establishment of Normal Schools in Massachusetts :—The Board of Education had proceeded only a short way in the discharge of its duties, when it became apparent to them (and it was no new discovery to the friends of education in the State), that a grand impediment to the improvement of schools consisted in the want of properly qualified teachers. "It was stated publicly, by a member of the School Committee of a town[1] containing thirty or more school districts, that one-half at least of the teachers approved by them would be rejected, only that it would be vain to expect better teachers for the present remuneration."[2] When it was maintained as a reason against augmenting the salaries of teachers, that the State could not afford any increase of its annual appropriations for schools, the question was put in derision, "Whether something more than one-six-hundredth part of its welfare might not come from the enlightenment of its intellect and the soundness of its morals?"

Their first foundation there.

So strong, however, was the aversion of the people to submit to additional taxation, that the Board did not propose any specific measures for improving the instruction of teachers, until, in March 1838, Edmund Dwight, Esq. of Boston, a member of the Bóard, authorised the Secretary to offer to the Legislature the sum of $10,000 to be expended in the qualification of teachers of Common Schools, on condition that the Legislature should place in the hands of the Board an equal sum to be appropriated to the same purpose.[3] A committee of the Legislature reported strongly in favour of accepting of the offer, and a resolution to do so passed both branches almost unanimously, and, on the 19th of April, was approved of by the Governor. After an anxious comparison of all practicable plans, the towns of Lexington and Barre were selected for the location of two of the Normal Schools; and the location of the third was undecided on in February 1839. The two Normal Schools were in successful action when I left the United States in 1840.[4]

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[1] See the term "town," as used here, explained, p. 617.

[2] First Annual Report of the Secretary to the Board of Education, 1838—(G.C.); now included in Horace Mann's "Life and Works," edited by Mrs Mann (5 vols., Boston, U.S.; Horace B. Fuller).

[3] This offer was made to the Legislature through Horace Mann, whose personal friend Mr Dwight was. See an account of this enlightened transaction in "The Life of Horace Mann," by Mrs Mann (2d edit. 1865), p. 100.

[4] America, vol. iii. pp. 75–7. The Lexington Normal School was afterwards removed to Newton, and then to Framingham; and the Barre one to Westfield. Other three have since been established in Massachusetts,—at Bridgewater, Salem, and Worcester.

Their abolition advocated.

In March 1840, the Board of Education, established in Massachusetts in 1837, with Horace Mann as secretary, sustained a notorious attack by an obstructive party, which advocated its abolition.[1] Amongst other matters, it proposed the abandonment of the above Normal Schools, saying that "*perhaps it is not desirable that the business of keeping district schools should become a distinct and separate profession*, which the establishment of Normal Schools seemed to anticipate!"[2] On this subject, George Combe remarks :—

> This is a striking acknowledgment of the low state of education in the Commonwealth ; and if the Committee had been composed of enlightened men, it would have perceived that this fact furnished the most forcible reason for establishing Normal Seminaries, and for increasing the length of the attendance at Common Schools; but they, on the contrary, recommended the abolition of the Board of Education, the school library, and the Normal Schools, and proposed to refund the money "generously contributed" to the support of the latter by Mr Dwight!! They appended to their Report the draft of an Act to carry these recommendations into effect!

This the best proof of their need.

In my humble opinion, all that has been written by European travellers against the people of the United States, their manners and institutions, will not depreciate the character of their civilisation in the judgment of reflecting men to one-half the extent that will be done by this document alone. It appears, indeed, to contradict much that I have said in favour of the American people ; and at the hazard of standing still farther condemned, I am under the necessity of reporting that it found 182 individuals in the House of Representatives of Massachusetts, the most enlightened of the States, to vote for its adoption. In point of fact, however, I have endeavoured to convey the idea that there is a vast extent of ignorance in the Union, and even in Massachusetts; and this report signally sustains the assertion.

The contest in favour of hem.

But there is also another side to the picture, which I am happy now to exhibit. The minority of the committee gave in an admirable report in support of the Board of Education and the Normal Schools. Some of the Boston newspapers warmly espoused their cause. Dr Channing[3] published, in one of these, an eloquent and cogent defence of them ; and, in the House of Representatives, a highly interesting debate ensued on the merits of the whole question, the result of which was that 248 members voted *for the rejection of the first mentioned Report*, making a majority in favour of the Board of 66 members.

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[1] Already described, pp. 613–4.

[2] America, vol. iii. p. 316.

[3] Dr Ellery Channing, one of the most enlightened educationists the world

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Works on the Training of the teacher.

[On the need, nature, means, and history of the Professional Training of the teacher, the following works may be consulted :— "Contributions to the Cause of Education," by Professor Pillans, part i. (London: Longmans); Horace Mann's "Life and Works," by Mrs Mann, Report for 1839, and Lecture ii. on "Special Preparation a Prerequisite to Teaching" (Boston, U.S.: Horace B. Fuller); Stow's "Training System," chap. xxvi. *et seq.* (London: Longmans); Herbert Spencer's "Education" (London: Williams & Norgate); "The Educator," being Prize Essays on "The Expediency and Means of Elevating the Profession of the Educator," by John A. Heraud, James Simpson (George Combe's friend), and Sarah Porter, published by the Central Society of Education, (London: Taylor & Walton); Professor Payne on "The Science and Art of Education" (London: Henry S. King), and on "The Importance of the Training of the Teacher" (London: Ridgway); the Editor on "The Professional Training of Teachers," read before the Social Science Association, and included in their Transactions for 1874, and in an article, under the same title, in the *Fortnightly Review* of September, 1874; Mrs William Grey on "The Study of Education as a Science," a paper read before the British Association in Belfast, in 1874 (London: Ridgway); Dr Hodgson's Address on Education, delivered before the Social Science Association at Norwich, in 1873, and included in the Transactions; James Simpson's

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has seen, was a champion of all advancement in education, as in all other subjects of social progress, and a friend and admirer of Horace Mann. He wrote Mr Mann a congratulatory letter, when he left his distinguished position in the Legislature, and with "eccentric disinterestedness" devoted himself to the despised work of education, saying that he "could not find a nobler station; Government had no nobler to give:" and wishing to be allowed to "labour under" him—a wish which he most abundantly fulfilled, in efforts and eloquent appeals for education.—See "Memoirs of Channing," vol. iii. p. 233 (London: Routledge, 1850).

[1] America, vol. iii. p. 316, where the above Report is criticised in detail. The attack was made when George Combe was in America, and while visiting Mr Mann.

Works on the Training of the teacher.

"Philosophy of Education," chap. vii. and Appendix vi. (Edinburgh: A. & C. Black); Scott Russell's "Systematic Technical Education," p. 206 *et al.* (London: Bradbury, Evans, & Co.); Willm's "Education of the People," part iii., and Preliminary Dissertation by Professor Nichol (Glasgow: William Lang); "The Training of Teachers," a paper read before the Ayrshire branch of the Educational Institute of Scotland, by William Glasgow (Glasgow: Robert Forrester, Royal Exchange Square); numerous papers read before the College of Preceptors, London, (which had the distinguished honour of appointing, in 1873, the first Professor of Education in Britain, Professor Payne, whose works on the subjects are mentioned above, and who died in 1876), and published in their organ, "*The Educational Times*," which has had frequent leaders on the same subject, for many years; also papers read before the "Society for the Development of the Science of Education" in London, lately founded, of which "*The Scholastic World*" is the organ.

He should be trained in the Universities.

The idea, referred to p. 650, of having teachers trained in our Universities, alongside of other professions, by Professors of Education, with full practising machinery, has of late years been gaining ground; and has at length taken practical form in the appointment, in 1874, of such Professors at Edinburgh and St Andrews Universities. See an account of the various efforts made for this end, in the Editor's papers on "The Professional Training of Teachers," mentioned above.—*Edit.*]

CHAPTER III.

ON THE SOCIAL STATUS OF THE TEACHER.

The wisdom of a high social status for the teacher.

BEFORE much improvement can be expected, teachers must be raised in consideration and social rank; and this can be accomplished only by increasing their valuable attainments, and by teaching the people to appreciate and honour such qualities. In Britain, they are now not generally reckoned as fit companions for gentlemen; they are not presented to company.[1] Whence does this arise? From the circumstance, it appears to me, that their occupation has not been scientific but empirical. But this must be allowed: If the man who takes care of our bodies is considered equal to the best of us, surely the man who takes care of the mind —trains and instructs it—should not be considered as below our companionship. So to consider him is a relic of barbarism.[1]

The first thing that you require is a true Philosophy of Mind; then teachers, well trained and instructed according to this Philosophy, shall be ranked as high in public estimation as any class of professional men. Then you require the parents to assist the teachers in their duties, which may be done in many ways.[2]

The low position of teachers and the means of raising it.

Let us advert to the lamentable condition in which the teachers of youth are retained, in consequence of the extreme deficiency existing in the education of all classes of society. If man's rational nature were regarded as his glory, and the fountain of his true happiness, and if the office of teachers, male and female, were to cultivate and advance this portion of the mind; no employment could be more delightful, no situation would require higher attainments in those who aspired to it, and no individuals could be found of higher worth and value to society. But the reverse of all this is the fact. Nothing can be more slender than the stock of useful and positive knowledge possessed by the common teachers of youth, and nothing more abortive than the results of their labours. They are the half-blind leading the wholly blind: and, in consequence, they hold a very subordinate place in public estimation; they are very poorly remunerated for their labours; and those among themselves who enjoy any considerable degree of depth of reflection feel mortified with their own ignorance, and that of society which restrains them from advancing in knowledge.[1]

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[1] American Lectures, edited by Boardman, p. 366.

[2] Ditto, p. 368.

The low position of Female teachers.

Among females, the case is, if possible, worse. A fashionable governess is not supposed to know anything of the Philosophy of Mind, or any other science; she is made up of accomplishments,—of music, drawing, French, Italian, and fine manners: and the young ladies entrusted to her care rarely rise above her attainments. The mothers have been educated in the same way, and, neither they nor the governesses of their children possessing any real substratum of Philosophy or practical knowledge, are rivals in appearance and superficial accomplishments. At least, many ladies indicate, by their conduct, that they fear this rivalry; the governesses are treated with great coldness and contempt; they are not admitted as equals into the family circle; they cannot associate with the menial servants: and, in this way, live in virtual banishment, as far as interchange of feelings and affections among friends and equals is concerned, although placed in the bosom of a numerous and apparently cultivated family.[2]

The patriotism of raising the teacher's status.

The Americans need proper Normal Schools in which their teachers may be instructed in the Philosophy of Mind, and in the Art of Training and Teaching; and they must also pay them handsomely before they will command good education. If the Americans were animated by an enlightened patriotism, they would submit to a large taxation to accomplish this object, because, on its fulfilment, will depend the future peace and prosperity of their country.[3]

[1] The above estimate of the social position of the teacher is still too sadly true; and there is no doubt also that the true remedy is pointed out. As Scott Russell well says, "If we were truly wise, we should think no manner of man too distinguished, and no social remuneration unreasonable, which should tempt into the rank of the pedagogue the most distinguished men in Science, Art, and practical life, and so secure the first condition—that the things taught have the advantage of power, weight, and authority."—"Systematic Technical Education."

[2] *Phrenological Journal*, vol. vi. (1829–30) p. 629.

[3] America, vol. iii. p. 105. "There should be no economy in education," says the great Dr Channing. "Parents should do all but impoverish themselves to induce the first minds in the community to become the guardians and guides of their children."—"Remarks on Education."

APPENDIX.

No. I.—THE FACULTIES OF THE HUMAN MIND ACCORDING TO PHRENOLOGY.

Referred to, p. 263, &c.

1. Outline of the Phrenological Faculties, with their Uses and Abuses; by George Combe.[1]

Order I. FEELINGS.

GENUS I. PROPENSITIES.

Common to Man with the Lower Animals.

THE LOVE OF LIFE.[2]—*Uses:* It gives the love of life, and instinct of self-preservation; combined with Hope, it desires to live for ever. —*Abuses:* Excessive love of life. When it is very largely developed, and combined with Cautiousness large, it gives an anxious dread of death.

1. AMATIVENESS.—*Uses:* It produces love between the sexes. Marriage springs from Amativeness, Philoprogenitiveness, and Adhesiveness, acting in combination.—*Abuses:* Promiscuous intercourse with the opposite sex, seduction, marriage with near relations, marriage while labouring under any general debility or serious disease, marriage without possessing the means of maintaining and educating a family.
2. PHILOPROGENITIVENESS.—*Uses:* Affection for young and tender beings.—*Abuses:* Pampering and spoiling children.
3. CONCENTRATIVENESS.—*Uses:* It renders permanent, emotions and ideas in the mind.—*Abuses:* Morbid dwelling on internal emotions and ideas, to the neglect of external impressions.

3*a*. INHABITATIVENESS.—*Uses:* It produces the desire of permanency in place.—*Abuses:* Aversion to move abroad.

4. ADHESIVENESS.—*Uses:* Attachment; friendship and society result from it.—*Abuses:* Clanship for improper objects, attachment to worthless individuals. It is generally strong in women.
5. COMBATIVENESS.—*Uses:* Courage to meet danger and overcome difficulties; tendency to oppose and attack whatever requires opposition, and to resist unjust encroachments.—*Abuses:* Love of contention, and tendency to provoke and assault. This feeling obviously adapts man to a world in which danger and difficulty abound.

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[1] From the Introduction to America, vol. i. p. xxvii.; and his "Life," by Charles Gibbon vol. ii. p. 386.

[2] Now called Vitativeness.

6. DESTRUCTIVENESS.—*Uses:* Desire to destroy noxious objects, and to kill for food. It is very discernible in carnivorous animals.—*Abuses:* Cruelty, murder, desire to torment, tendency to passion, rage, and harshness and severity in speech and writing. This feeling places man in harmony with death and destruction, which are woven into the system of sublunary creation.

6*a*. ALIMENTIVENESS: APPETITE FOR FOOD.—*Uses:* Nutrition.—*Abuses:* Gluttony and drunkenness.

7. SECRETIVENESS.—*Uses:* Tendency to restrain within the mind the various emotions and ideas that involuntarily present themselves, until the judgment has approved of giving them utterance; it is simply the propensity to conceal, and is an ingredient in prudence.—*Abuses:* Cunning, deceit, duplicity, and lying.

8. ACQUISITIVENESS.—*Uses:* Desire to possess, and tendency to accumulate articles of utility, to provide against want.—*Abuses:* Inordinate desire of property, selfishness, avarice, theft.

9. CONSTRUCTIVENESS.—*Uses:* Desire to build and construct works of art.—*Abuses:* Construction of engines to injure or destroy, and fabrication of objects to deceive mankind.

GENUS II. SENTIMENTS.

I. *Sentiments common to Man with the Lower Animals.*

10. SELF-ESTEEM.—*Uses:* Self-respect, self-interest, love of independence, personal dignity.—*Abuses:* Pride, disdain, over-weaning conceit, excessive selfishness, love of dominion.

11. LOVE OF APPROBATION.—*Uses:* Desire of the esteem of others, love of praise, desire of fame or glory.—*Abuses:* Vanity, ambition, thirst for praise independently of praiseworthiness.

12. CAUTIOUSNESS.—*Uses:* It gives origin to the sentiment of fear, the desire to shun danger, and circumspection; and it is an ingredient in prudence.—*Abuses:* Excessive timidity, poltroonery, unfounded apprehensions, despondency, melancholy.

13. BENEVOLENCE.—*Uses:* Desire of the happiness of others, universal charity, mildness of disposition, and a lively sympathy with the enjoyment of all animated beings.—*Abuses:* Profusion, injurious indulgence of the appetites and fancies of others, prodigality, facility of temper.

II. *Sentiments proper to Man.*

14. VENERATION.—*Uses:* Tendency to venerate or respect whatever is great and good; it gives origin to religious adoration.—*Abuses:* Senseless respect for unworthy objects consecrated by time or situation, love of antiquated customs, abject subserviency to persons in authority, superstitious awe.

15. FIRMNESS.—*Uses:* Determination, perseverance, steadiness of purpose.—*Abuses:* Stubbornness, infatuation, tenacity in evil.

16. CONSCIENTIOUSNESS.—*Uses:* It gives origin to the sentiment of justice, or respect for the rights of others, openness to conviction, the love of truth.—*Abuses:* Scrupulous adherence to noxious principles

when ignorantly embraced, excessive refinement in the views of duty and obligation, excess in remorse or self-condemnation.

17. HOPE.—*Uses:* Tendency to expect future good; it cherishes faith.—*Abuses:* Credulity with respect to the attainment of what is desired, absurd expectations of felicity not founded on reason.
18. WONDER.—*Uses:* The desire of novelty; admiration of the new, the unexpected, the grand, the wonderful, and extraordinary.—*Abuses:* Love of the marvellous and occult; senseless astonishment; belief in false miracles, in prodigies, magic, ghosts, and other supernatural absurdities.—*Note.* Veneration, Hope, and Wonder, combined, give the tendency to Religion; their abuses produce superstition.
19. IDEALITY.—*Uses:* Love of the beautiful and splendid, desire of excellence, poetic feeling.—*Abuses:* Extravagance and absurd enthusiasm, preference of the showy and glaring to the solid and useful, a tendency to dwell in the regions of fancy and to neglect the duties of life.

19*a*. The organ of Sublimity: but not sufficiently ascertained.[1]

20. WIT.—Gives the feeling of the ludicrous, and disposes to mirth.
21. IMITATION.—Copies the manners, gestures, and actions of others, and appearances in nature generally.

Order II. INTELLECTUAL FACULTIES.

GENUS I. EXTERNAL SENSES.

FEELING OR TOUCH. TASTE. SMELL. HEARING. SIGHT.	*Uses:* To bring man into communication with external objects, and to enable him to enjoy them. —*Abuses:* Excessive indulgence in the pleasures arising from the senses, to the extent of impairing bodily health, and debilitating or deteriorating the mind.

GENUS II. KNOWING FACULTIES, WHICH PERCEIVE THE EXISTENCE AND QUALITIES OF EXTERNAL OBJECTS.

22. INDIVIDUALITY.—Takes cognizance of existence and simple facts.
23. FORM.—Renders man observant of form.
24. SIZE.—Gives the idea of space, and enables him to appreciate dimension and distance.
25. WEIGHT.—Communicates the perception of momentum, weight, and resistance; and aids equilibrium.
26. COLOURING.—Gives perception of colours and their harmonies.

GENUS III. KNOWING FACULTIES, WHICH PERCEIVE THE RELATIONS OF EXTERNAL OBJECTS.

27. LOCALITY.—Gives the idea of relative position.
28. NUMBER.—Gives the talent for calculation.
29. ORDER.—Communicates the love of physical arrangement.
30. EVENTUALITY.—Takes cognizance of occurrences or events.
31. TIME.—Gives rise to the perception of duration.

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[1] It is now generally admitted by phrenologists.

32. TUNE.—The sense of Melody and Harmony arises from it.
33. LANGUAGE.—Gives facility in acquiring a knowledge of arbitrary signs to express thoughts, readiness in the use of them, and the power of inventing and recollecting them.

GENUS IV. REFLECTING FACULTIES, WHICH COMPARE, JUDGE, AND DISCRIMINATE.

34. COMPARISON.—Gives the power of discovering analogies, resemblances, and differences.
35. CAUSALITY.—Traces the dependences of phenomena, and the relation of cause and effect.

2. A POPULAR EXPLANATION, AND DEFENCE, OF THE PHRENOLOGICAL FACULTIES. BY JAMES SIMPSON.[1]

It is plain that, until an approximation be made to something like a practical analysis of the mind of man,—until the faculties to be improved by education be known,—education must continue to be vague, misdirected, and inefficient, as it has hitherto been. If, as is evident, we can make no practical use of a great part of the catalogue of faculties which we studied at college, may we not meet upon some admitted common ground? May we not adopt those impulses or powers of mind which constitute the view of man taken, by necessity, in the common affairs of life, but rejected by philosophers, and therefore never reduced to anything like system, and, above all, never resorted to in education? Let any one think what are the tendencies or characteristics in his fellow-men to which he traces their actions, and upon which he relies with the utmost confidence for certain expected results. Let us turn to our most successful portrayers of nature, a Shakspeare and a Scott, and observe what are their constitutional characteristics of that nature, to which the same faculties in ourselves echo with such delighted sympathy. Assuredly these will not be found in the catalogues of the metaphysicians. I should be safe in conditioning that I shall not need to claim for human nature any one impulse not recognised and dealt with—practically, though not systematically—by Shakspeare and Scott. These are capable, we think, of a much more satisfactory analysis than might be supposed; an analysis which only requires to be acted upon, to supply a basis for education which would advance its efficiency to a degree almost beyond our calculation. I feel so confident that all my postulates as to human powers, impulses, instincts, or faculties—for we need not dispute about names—will be conceded to me, from the impossibility, as I humbly view it, of refusing the concession, that I am content to peril the whole argument upon its being admitted by every educated person—First, that the impulses now to be enumerated form constituent parts of man; and secondly, that, as is true of the physical structure and organic functions, each is related to some objects in nature, moral or physical, external to itself but directly pointing to it, upon which it is exercised. I wish it, however, to be distinctly understood that I do not found upon physiological evidence of the truth of the analysis of faculties which I am humbly to offer, because that evidence is not generally admitted; I do not require to trace each faculty to a disputed cerebral origin: the faculties shall be merely metaphysically submitted *seriatim* to the reader's judgment and his own experience appealed to, and any one which he does not recognise in man I am quite contented that he shall reject. If, too, he does not think the relative object correctly added to each faculty as we advance, that also he is at perfect liberty to disallow.

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[1] From his "Philosophy of Education," 2d ed. 1836, p. 65. Edinburgh: A. & C. Black.

1. I do not fear denial when I claim for man a LOVE OF LIFE [VITATIVENESS].[1]

2. It is not less certain that he has AN APPETITE FOR FOOD [ALIMENTIVENESS],[2] an instinct which directs him, even when new born, to remove the pain of hunger, the only pain then removable by an act of his own. Forming a variety or mode of the instinct of food, which last includes hunger and thirst, is the desire of the stimulus of alcohol, in wine or some other shape. The abuses of these appetites are gluttony and drunkenness. That this instinct is primitive is demonstrated by its often existing in a state of disease; the insatiable craving of hunger, even when the stomach is full, is a common lunatic symptom; while the temptations of wine and ardent spirits often become altogether beyond the control of the will. The relative objects of that instinct are edible animal and vegetable matter; while the juice of the grape, and other extracts capable of being fermented and distilled, gratify the taste for alcohol alluded to.

3. For the preservation of his species, man is endowed with AN INSTINCT OF SEX [AMATIVENESS]. As the abuse of this impulse leads to much evil and suffering, individual and social, it requires much more educational watching and regulation than it ever receives. Of this neglect, the consequences to body and mind are often horrible. Its derangement is known in lunatic asylums, and detailed in works on insanity. Its object, relatively, is the other sex.

4. Man has AN IMPULSE TO CHERISH HIS OFFSPRING [PHILOPROGENITIVENESS]. There are cases in which this propensity has been morbidly excited. Its relative object is the helplessness and innocence of childhood; the feeling and the object were intended for each other.

5. ATTACHMENT TO THE PLACE OF BIRTH AND RESIDENCE [CONCENTRATIVENESS AND INHABITIVENESS] is a well-marked element in the constitution of man.

6. A PROPENSITY OF ATTACHMENT [ADHESIVENESS] to his fellow-men, in the alliances of society and friendship, is a part of man's constitution. This feeling is so strong that solitude has often produced mental alienation, as has the unmitigated silence of some penitentiaries. Man's fellows exist in manifest relation to this social tendency.

7. No impulse requires more the restraining hand of education than the PROPENSITY TO CONTEND AND FIGHT [COMBATIVENESS]. We are made most aware of its being part of man by seeing it in the various forms of its abuse,—contentiousness, contradiction, violence, assault, and war. But as no instinct or faculty was given for the purposes of abuse, we shall find the use of this Propensity in self-defence, courage, enterprise, and general activity. This impulse has a marked relation to external objects; it was given to man that he may

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[1] The terms in brackets are added by the Editor, to show their phrenological connection; but this has been done only where they are different from those in the text.

[2] This appears in George Combe's list, p. 658, as 6*a*. It appeared originally second in his list, as above, but was afterwards transferred.

repel the dangers which often assail him from other animals, and the passions of his fellow-men. Its disease is a troublesome form of violent lunacy.

8. It is not enough that man shall contend and fight, it is often imperative that he shall destroy. Besides killing for food, he must, in self-defence, kill dangerous animals, and more dangerous men, that assail him; and to fit him for this, he has An Instinct to Destroy [Destructiveness]. The feelings which prompt to this extreme, with regard to his own species at least, are resentment, anger, and rage. These are often abuses; and certainly so is a cruel delight in giving pain, and even depriving of life. In disease, it is the most dangerous form of madness; for it produces murder without motive, appetite for blood, ungovernable violence, and indiscriminate destruction of everything within its reach. Much short of disease, it is a troublesome propensity; cruelty to animals, and the tendency to deface and destroy, are its manifestations; while the irascible tempers which disquiet the domestic circle, are its most ordinary form of abuse. It requires for its regulation, if not its repression, the firmest and the gentlest educational management. The impulse is widely spread in the animal creation; it is the instinct of prey; and teeth, tusks, beaks, and claws are its instruments. It prompts man, too, to arm himself with *destructive* weapons, from the rude club to the battery of cannon. Lastly, it constitutes the impulse to punish, to inflict pain, torture, and death.

9. In nothing will the observant instructor of youth perceive more diversity among individuals than in the characteristics of reserve or openness. Some individuals are so close that nothing can be extracted from them; others apparently never conceal anything. The truth is, that all conceal much more than they declare, and An Impulse to Conceal [Secretiveness] is a constituent part of man, for the wise purpose of preventing that constant exposure of thoughts and intentions, which would not only render society intolerable, but would remove a material guard against the evils which, by their selfish passions, men are inclined to inflict upon each other. The right use of the impulse to conceal is a prudent reserve; its abuses are cunning, duplicity, and deceit. Those who are conversant with the insane, are well aware how often a morbid habitual cunning calls for increased vigilance. The related objects of the faculty are the other faculties whose outward manifestations it restrains. The perfection of what is called acting, in both a favourable and unfavourable sense, depends partly on the energy of this power. Some children are consummate *actors*, and thereby greatly perplex their teachers, who are ignorant of the spring and origin of that deceptive character.

10. Man has A Desire to Possess [Acquisitiveness] the material things that contribute to his enjoyment, and to accumulate them in exclusive property. The use of the faculty to each individual is the attainment of the means of regular subsistence for a family, and the benefit of inheritance. Its abuse is avarice; its grosser abuse, theft; its disease every one has heard of or witnessed, in an impulse, not created by necessity, but beyond the control of the will, to appropriate things of value, and, in the worst cases, whether of value or not. The related objects of the Propensity are, material things which afford enjoyment in some way to the faculties, and money, their sign and convertible value. The regulation of this Propensity ought to be an important object of attention in education.

11. Independently of his reason, man has An Impulse to Construct

[CONSTRUCTIVENESS], to change the forms and combinations of matter into instruments and accommodations; Franklin called him a "tool-making animal." The faculty is often possessed in uncommon power by cretins and other idiots, without an atom of intellect to guide it. Reason and imagination greatly aid the faculty in man, as is evident when we compare the wigwam with the palace. Individuals differ greatly in this primitive power; some can make whatever they see, others cannot fold a letter neatly. The relative objects of the impulse are manifest in the material world. This power the judicious instructor will recognise and call forth in his pupil.

It must have occurred to the reader that, in the inferior animals, are found *all* the eleven Propensities now described; for they are important, if not essential, to animal existence. On this ground, I shall distinguish them as a class, and refer to them in the sequel by the name of the ANIMAL PROPENSITIES. Before leaving this class of faculties, it seems the best time to appeal to the reader's experience if it be not truth, and press the fact on the attention of the educationist, that vice and crime, in all their phases and varieties, are but other terms for the abuse of one or more of these specified impulses. The enumeration of a few will sufficiently illustrate this, and the reader can apply each instance to the impulse abused, for they are set down in the order adopted—namely, gluttony, drunkenness, incontinence, contention, violence, cruelty, murder, robbery, fraud, theft, &c.

12. Scarcely anticipating the possibility of the rejection of any of the eleven impulses already submitted, I would next, with not less confidence, claim for man, as we are comprehending him, a Sentiment of SELF-LOVE (SELF-ESTEEM), in which is included, as well, self-elevation as self-preference. In due and beneficial endowment, it is a legitimate attention to our own well-being; it is self-respect, independence, and confidence in our own powers and capacities. In abuse, it is pride, self-sufficiency, disdain, insolence, love of power, tyranny, and general selfishness. It is a great exciting cause of the activity of the impulse to resentment and rage, when it takes the deeper colour of revenge; and when combined with the impulse to appropriate, it renders that propensity yet more steady, grasping, and exclusive. It is the special faculty of quarrels and duels, and forms the ingredient of turbulence and tyranny, which is a nuisance in public and a curse in private life. No faculty of man is more apt to run into abuse, and half the moral evils of man's lot spring from that abuse. The guide of youth cannot, therefore, too early begin to watch and repress its unamiable manifestations, and regulate its legitimate exercise. Under the present system of education, this important part of man is left to its own guidance. It needs scarcely be added, that it is often manifested in a form of insanity, not to be mistaken; morbid self-exaltation accounts for the straw crowns and wooden sceptres of Bedlam. The related objects of the feeling are obviously self and its concerns.

13. Another Sentiment, often, but improperly, confounded with Self-love, exercises a mighty influence on man, and furnishes the key to much of the pursuit of his life; and that is, DESIRE OF ESTIMATION or APPROBATION [LOVE OF APPROBATION]. By the one, a man esteems himself; by the other, he courts the esteem of others. They are best distinguished in their abuse. The one is pride, the other vanity; the one assumes, the other begs: hence it is often truly remarked that an individual is too proud to be vain. The use of

the Sentiment now considered, as intended by the All-Wise who endowed man with it, is a proper regard to character, the feeling of shame, and, under proper regulation, the incitement to worthy conduct in the love of praise. The feeling shrinks from reproach, censure, ridicule, and exposure. It leads to a careful concealment of vices, follies, and weaknesses, and, better yet, often to their cure. The laws which enact disgraceful punishments, as the pillory, address it directly. It is essentially the love of glory, and, in combination with self-exaltation, it constitutes ambition. Finally, it often runs into disease, of which any one who has visited a large lunatic asylum must have been rather annoyingly made aware, by the eager competition of the *vain* patients to detail and display to him their merits, each at the same time pitying his neighbour for his vain-glory. What, it may be asked, has education ever done to regulate this and the previous powerful and all-pervading feeling? The answer is—Nothing! On the contrary, it has carefully *instituted* the means of aggravating the evils of both, by all the competitions, prizes, preferences, and "honours," of our schools and colleges. The related object of this feeling is found in the tendency of mankind to observe and judge each other.

14. That A SENTIMENT OF FEAR [CAUTIOUSNESS] is a part of man, no one will deny, and least of all the teacher of the old school, whose ever-brandished rod and cane make a personal appeal to the feeling. The Sentiment is given as a self-protector from dangers, physical and moral, with which we are surrounded. Its abuse is cowardice, terror, and panic. Punishment, for the sake of example, implies our belief in its power as a motive. Its external objects are danger and evil in general. When diseased, it occasions the groundless fears and horrors of Hypochondria, and is essentially that insane Melancholy which furnishes the impulse to suicide, by sufferings far more intense than man often knows in what is erroneously distinguished as reality.

The last and the two preceding Sentiments of Self-love and Desire of Estimation evidently regard *self;* and, therefore, although very important constituent faculties in man, and intended, in their proper use, for the wisest ends, have nothing in them amiable or exalted. They are as self-seeking as any of the nine Animal Propensities, and therefore may conveniently be classed with these, under the general denomination of the INFERIOR FEELINGS. The whole twelve instincts make up and constitute the Scriptural entity, of the "law in the members warring against the law in the mind."

15. That there *is* a law in the mind, is beautifully implied in the very distinction of Scripture alluded to; and it is the object of education, while it represses and regulates the law in the members, to strengthen and confirm the law in the mind. The first element of the law in the mind is BENEVOLENCE, the benign parent of a catalogue of graces; in kindness, desire of the good of others, generosity, compassion, mercy, and all the sympathies of brotherly love. Sentient beings, generally, are the related objects of this exalted Sentiment, and their happiness is its scope and delight. It is an error to suppose its function confined to compassion and relief, to distress and misery. It goes much beyond this: it is a well-spring of good-will to men, and reaps positive delight from the increase and extension of human happiness. The field of Benevolence is boundless, for it embraces all that can aid or advance human happiness, physical and moral. It desires to see man free, enlightened, morally

and religiously elevated, and placed in physical comfort and safety. It descends also to kindness to the lower animals.

Even this high Sentiment is capable of abuse. This appears in facility, indiscriminate almsgiving, and profusion. In disease, it is beyond the power of the will of the individual, to whom, therefore, the law appoints a guardian.

16. A Sentiment of JUSTICE or CONSCIENTIOUSNESS belongs to man. It respects the rights of others, and is also manifested in truth and candour. Its deficiency is a great defect of character, unamended even by Benevolence. The benevolent but unconscientious individual is apt to be generous before he is just, according to an everyday expression. It is a mistake to recognise a defective Conscientiousness in that palpable dishonesty only which calls for the interference of the law. It is a widespreading evil in society, far short of that degree of its manifestation. It shows itself in a way and manner against which the law cannot make provision, in the great variety of modes in which men for selfish ends are *unfair* to each other, by taking advantages which they would not give: concealing the truth which ought to be told, or misleading with regard to it; disallowing others' claims, not capable of easy proof; shrouding others' merits; mis-stating or distorting others' arguments; resenting fair competition; envying success; manifesting a selfish jealousy; indulging in evil-speaking and ridicule; and, in a thousand ways, "doing to others that which we would *not* they should do to us." There is not a more delicate task for the Infant teacher—for the training must be early—than the exercise of the Sentiments of Justice and Truth, not merely in its broad lines, but in its minutest shadowings. The disease of the feeling, for even Conscientiousness may be over-excited, is observed in the melancholy self-accusatory ravings of some maniacs, especially in those too numerous cases in which religious terrors have driven reason from its seat. The related objects of the Sentiment of Justice are the rights and feelings of our fellow-men. It acknowledges the justice of God.

17. The most superficial observer of man cannot have failed to feel in himself, and observe the signs in others, of a Sentiment of VENERATION, a feeling of deference, submission, and reverence. Deferential terms are used by us in our converse with those we feel to be our superiors in intellect or convential rank, as something that is their due; and the whole strength of the feeling can be testified by those whom it has deprived of utterance when suddenly brought into the presence of majesty.

But there is a higher related object of this feeling than earthly kings. The King of kings is its great end and object: it is then Veneration, and constitutes the chief ingredient in the adoration of Religious worship. A large natural endowment of the Sentiment often carries mere external sanctity to excess, and, mistaking it for religion, claims and often receives consideration and homage for it, to the inconvenient crowding of the calendar. The feeling also runs into monomania. The misdirection of this feeling, either towards the Deity or our fellow-men, is attended with so much evil, that its proper guidance and exercise ought to form, what it never yet has formed, an object of the most attentive and enlightened educational care.

18. I claim no more for man than almost all metaphysicians do, and all the non-metaphysical world, in attributing to him a Sentiment of HOPE, the source of much worldly happiness, and the *natural* foundation of our prospects of a life to come. Hope is an ingredient in Religious feeling; while, in common

life, it is not confined to expectations and anticipations of the future, but is a permanent gaiety, lightness of heart, and buoyancy of spirits, which is contented with the present, dreads no evil, and constitutes in itself real happiness. Children, as well as adults, differ widely in this character of mind. An enlightened teacher of youth will convert the feeling to useful purposes.

19. The teacher will find his pupils to differ in another respect; he will meet with some of them pliant and obedient, and others obstinate and impracticable. There is, in different degrees, in man a Sentiment of FIRMNESS, the use of which is perseverance and fortitude, the abuse of which is obstinacy. It is of importance that this should be recognised in education as an innate feeling, by which much labour to the teacher and suffering to the young might be prevented, by avoiding vain contests with obstinacy, persevered in by the teacher in the expectation of curing the defect, while he is only strengthening the feeling and confirming the habit. The struggle with an obstinate child who is further fortified by pride and self-sufficiency, may be compared to an attempt to extract a nail by striking it on the head; every stroke only drives it farther. The judicious teacher will take care never to bring the matter to that issue, but will address himself to other faculties, especially Justice, Benevolence, and Reflection; keeping in mind the fable, that the storm could not induce the traveller to part with his cloak, while he held the faster, but the sun prevailed.

20. Man loves the wonderful. That the Sentiment of WONDER is innate, will scarcely be doubted by any one who observes its power as a motive, and the fortunes that are made by appeals to it. It is evidently bestowed as a source of delight in contemplating the wonders of creation, and as an impulse to inquiry. With Veneration and Hope, it constitutes the Religious combination of faculties; I mean what is called Religious *feeling*, for conscience and reflection are the bases of Religious *duty*. The joint operation, in due proportion, of the two sets of faculties, makes up the perfection, humanly speaking, of the Religious character, while a separation of them is always more or less to be regretted. Education is called upon to watch this faculty; it will show itself in a child, in a tendency to exaggerate and embellish, a marked delight to surprise and occasion wonder, with often an utter sacrifice of truth to attain that end.

21. I do not anticipate objection to a faculty for the sublime, the beautiful, the elegant, the perfect, the poetical, as a constituent of the mind of man. The Imagination of the metaphysicians comes nearest this Sentiment, but it does not express it. Imagination is considered as a power which produces ideal creations; the feeling in question is a mere Sentiment, or habit of mind, which aspires to the beautiful and perfect, and communicates an elegant refinement to the whole character; it prompts other faculties to create, while itself merely feels, and views all nature with associations of beauty and of poetry. Its abuse is romantic enthusiasm, unguided by reflection. Its related objects are all that is beautiful and sublime in nature; it is one of the gifts of Divine Benevolence, which points directly at high enjoyment; like music it is something superadded to the necessary faculties. When it is absent or deficient, the individual is gross and unrefined. Infant education takes much care of this feeling, and, in various ingenious ways, calls it into exercise, with different success, according to the degree of natural endowment; for in nothing do in-

dividuals differ more from each other. With the explanation now given, I shall call this faculty IMAGINATION, or IDEAL PERFECTION. A still more beautiful term is IDEALITY [the phrenological term].

22. THE LOVE OF THE LUDICROUS [WIT], requires a judicious educational management. Man is the only laughing animal, the only one gifted with a specific enjoyment from the contemplation of incongruity. It is greatly abused in satire, tricks, and mischief, and requires watching; it operates severely on the temper of many who are made its butts, and often withers every purpose of exertion or improvement. Certainly it has been greatly neglected in education. Its relative objects are found in the exhaustless fields of incongruity.

23. IMITATION is a marked faculty in man, which shows itself even in the youngest children. Its purpose is manifestly to bring society to a convenient uniformity of manners, without which it would present a scene of inextricable contrariety, and to aid in inducing the powers of the young, by the energy of an impulse, to do what they see done by their seniors. It aids, as is most obvious, the imitative arts; and has, for its selected objects, no narrower field than universal nature.

The reader is requested to glance back at the faculties just treated of, beginning with 15 and ending with 23, and to keep in mind that, whenever the MORAL SENTIMENTS are mentioned, these nine faculties are meant. He will at once observe that Self-Love, Desire of Estimation, and Fear, are not of dignity sufficient to be classed with the Moral Sentiments; but, being as selfish in their nature as the Animal Propensities, and being also plainly discernible in the inferior animals, they are classed with the Propensities under the general name of the INFERIOR FEELINGS: it follows that the Moral Sentiments are meant, when the term SUPERIOR FEELINGS is used. These last distinguish man on this earth from all the creatures of God.

But the "Law in the Mind" would be an imperfect regulator of the "Law in the Members," if it consisted even of the Moral Sentiments alone. Sentiments are but Feelings, and Feelings, however virtuous, are blind, and depend upon Intellect for their proper direction. For example, Benevolence prompts us to succour poverty; but that Feeling makes no inquiry into the cause of that poverty which it relieves. It therefore requires to be itself directed by another class of faculties, namely, the Intellectual; which, observing, perceiving, knowing, and reasoning, can ascertain, if so it be, that the poverty is the result of idle and profligate habits, that the poor man is perfectly able-bodied and fit for labour, and that therefore the Benevolence is wasted, and worse, upon the encouragement of an unworthy object. Man is endowed with Intellectual faculties, and these may be divided into the KNOWING and REFLECTING. It is undeniable that, intellectually, we *know* and we *reflect*. It is a common observation that knowledge is not wisdom, till it is compared and reasoned on by Reflection. It is its combination with Reflection, which constitutes that knowledge which is power. The weakest Reflecting powers often co-exist in the same individual, with a store of wisdom which excites our wonder. A walking encyclopædia is a title currently given to a person who knows everything, while his reasoning powers are nevertheless of the humblest order. Nothing proves more demonstrably than this, that Knowing and Reasoning are distinct powers of mind.

The Five Senses are Knowing faculties. On these, it is unnecessary here to enlarge. They are described in every school-book.

The Knowing Powers cognize two distinct classes of objects, namely, *existence* and *events*, in other words, things that *are* and things that *happen*. Let any one reflect for a moment, and he will find, that whatever he knows must be either an existence or an event. The paper on which I write is an existence—a thing that is; if I drop it on the carpet, it is an event, a thing that has happened, a change has taken place; soldiers are existences, their battle is an event; the acid and the alkali are existences, the effervescence on mixture is an event. Existences are marked by nouns, in grammar; events require verbs. Natural History concerns existences; Civil History records events. Now, from observing that the power of perceiving and remembering these two classes of objects, respectively, varies, in a marked degree, in different individuals, we may consider them as distinct faculties; which require, in education, a separate range of study and exercise, the one improving the faculty for existences, the other faculty for events. I claim, then, for man,—

A Power to Cognize and Remember Existences [Individuality]:

A Power to Cognize and Remember Events [Eventuality]:

It is obvious that, to a great degree, man enjoys these faculties in common with the inferior animals, which last could not exist without a considerable degree of perception and memory, both of things that are and things that happen. These two faculties are most active in childhood and youth, possess a keen appetite for knowledge, and reap so much delight from its attainment, that an instructor, himself well endowed with knowledge, and distinguished by a lively and exciting manner of communication, who can keep wonder alive, and put into his lessons a due mixture of the *Higher Feelings*, will possess a power over the will and happiness of his pupils, which will form, and it is already known to form, a striking contrast to the heart-withering irksomeness of the old schools, in which an antiquated and most hurtful system of appeal to the Inferior Feelings of fear, self-exaltation, vanity, and covetousness, is found necessary to stimulate the languid faculties. The Knowing faculties are capable of great educational improvement, and, by judicious exercise, often arrive at such a degree of comprehension, minuteness, and accuracy, called cleverness and acumen, as to give great practical power in life, and to lead to discovery and invention which extend indefinitely the range of human attainment. We can now understand the mode of activity called *Attention;* it is the *tension*, or active employment, of the Knowing faculties when in the act of *observation*. The young must be called upon to observe, and that extensively and minutely; the educated know how little was done for them in this exercise, when they were engaged exclusively in reading books, and dreamily passing over the whole of existing things, though before their eyes.

There are other Knowing faculties, of marked distinction in the different degrees of manifestation by different individuals, which aid in the acquisition of knowledge; such as a perceptive power for each quality and relation of matter, as Form, Size, Force [Weight], Colour [Colouring], Arrangement [Order], Number, Place [Locality], Time, Sound [Tune]. On these, the talents of drawing, painting, sculpture, mechanics, calculation, and music depend. But these manifestations must be so obvious to the enlightened and judicious educationist, that I shall not occupy time and space with a detail of them.

The REFLECTING POWERS make use of the materials stored by the Knowing Faculties, for the purpose of performing the operation of REASONING. That consists of comparing two existences or two events, and concluding that something else exists, existed, or will or may exist, or that something else happens, happened, or will or may happen, in consequence.

The process ot Reasoning, of conclusion-drawing, is sometimes performed by a simple act of comparison, or perception of analogy: a great majority of mankind reason in this way—such a truth, they say, follows from the resemblance of two truths which they have compared. The whole of the brilliant field of what, in Reasoning, is called *illustration* is nothing more than this process of comparison; and, as many writers and speakers, and these like Dr Chalmers by far the most popular, manifest an almost exclusive preference for analogical and illustrative reasoning, I feel that I am warranted in distinguishing in man, the Reflecting faculty of COMPARISON.

Some reasoners, but comparatively few, are more severe, and are contented with no conclusions which do not stand in the relation of *Necessary Consequence* to their premises. This is truth, they reason, because it is deducible necessarily from the consideration of these other known truths brought together. These are the logicians who distrust analogy and comparison. The faculty they use is the highest intellectual power, the percipient of the relation of cause and effect, which I beg to designate by the name of THE FACULTY OF NECESSARY CONSEQUENCE [CAUSALITY]. When the distinct operation of the two mentioned faculties is understood by the instructor of youth, the different lines of talent will be obvious to him, and the educational training will be made to correspond.

It is a metaphysical error to distinguish *Memory* as a primitive faculty, seeing that the Cognizing and Reasoning powers must necessarily be the remembering powers; remembrance being nothing else but the continued impression of Cognition and Reasoning, varying according to the energies of these powers. If memory were a distinctive power, it would, in each individual, be alike strong, and regard *all* subjects of recollection alike. But this is not consistent with fact; one individual remembers existences, and another forgets existence and remembers events; a third recalls with ease a train of reasoning, another musical airs, and another the faces of persons he has seen, or the scenes he has surveyed—each perhaps weakly remembering something else of the matter now enumerated. We are therefore forced to the conclusion, that there is no general faculty called Memory, but that each faculty has its own power of recalling its impressions. The instructor of youth should ponder this truth well, and he will save himself and his pupil much time and labour, in the indefinite and desultory exercise of a supposed general faculty of Memory, when, in truth, he can only improve the memory of each faculty, in the proper direct cultivation of the faculty itself.

The reader is, it is trusted, now in a condition to see the propriety of disallowing *Perception* as a primitive faculty. Both the Knowing and Reflecting percipient powers have now been explained and distinguished: the faculty of existences perceives existences; that of events, events; that of comparison, resemblances; that of necessary consequence, cause and effect—so that a general faculty of Perception is necessarily a nonentity.

Last of all, I claim for man, whose composition we have now finished, the man-distinguishing faculty of Language, whereby he converts his thoughts into the conventional signs called words, and, in oral and written discourse, excites the faculties of his fellowmen in the boundless extent of social intercourse.

Once more, before proceeding farther, the reader is requested to subject the foregoing analysis to the strictest scrutiny. He is not asked to surrender the catalogue of faculties which may be dear to him, as associated with the venerable name of Alma Mater; he is welcome to reserve that for the amusement of his metaphysical hours. All that is now asked is, that he will admit, or at least not deny, that the feelings, impulses, or faculties, just submitted to his consideration, have been recognised by him in that being called Man.

The whole faculties which have been described are now brought under the reader's eye in a table, for the convenience of reference :—

INFERIOR FEELINGS.

Animal Propensities.

Love of *Life* [Vitativeness].
Instinct of *Food* [Alimentiveness].
,, ,, *Sex* [Amativeness].
,, ,, *Offspring* [Philoprogenitiveness].
,, ,, *Home* [Adhesiveness].
,, ,, *Society* [Inhabitiveness].
,, ,, *Courage* [Combativeness].

Instinct of *Destruction* [Destructiveness].
,, to *Conceal* [Secretiveness].
,, ,, *Possess* [Acquisitiveness].
,, ,, *Construct* [Constructiveness].
Self-Love [Self-Esteem].
Desire of Estimation [Love of Approbation].
Fear [Cautiousness].

SUPERIOR FEELINGS.

Moral Sentiments.

Benevolence [Benevolence].
Justice [Conscientiousness].
Veneration [Veneration]
Hope [Hope].
Firmness [Firmness].

Wonder [Wonder].
Ideal Perfection, Imagination [Ideality].
Laughter at the Ludicrous [Wit].
Imitation [Imitation].

INTELLECT.

The Senses.

Knowing Faculties.

Cognition of *Existences* [Individuality].
,, ,, *Events* [Eventuality]
,, ,, *Form* [Form].
,, ,, *Size* [Size],
,, ,, *Force* [Weight].
,, ,, *Colour* [Colouring].

Cognition of *Arrangement* [Order].
,, ,, *Number* [Number].
,, ,, *Place* [Locality].
,, ,, *Time* [Time].
,, ,, *Sound* [Tune].

Reflecting Faculties.

Comparison [Comparison].

Necessary Consequence [Causality].

Language [Language].

No. II.—ON THE CULTIVATION OF THE RELIGIOUS FACULTIES THROUGH SECULAR SUBJECTS.

Referred to p. 169, &c.

1. Dr. Andrew Combe's Views on the Subject.[1]

On the Introduction of Religion into Common Schools. By Andrew Combe, M.D. (*Extracted from his Life and Correspondence, by* George Combe, *page* 501).

Conscious of the immense power of the Religious Sentiments in the human mind, and of the impossibility of separating them, without violence, from their vital union with the moralities, I have all along felt that the plan of excluding Religion from education was inherently a defective one, which could not continue to hold its place against the assaults of reason and truth. In the past position of the question, it was the best which could be followed, and was defensible as the smallest of several evils among which society was compelled to choose. As such, I still advocate and defend it; but I think it important that it should be defended and advocated on its true grounds, and not as in itself proper and desirable. Instead, therefore, of recommending the separation of Secular from Religious instruction, as in themselves distinct, I would adopt the true grounds, and in answer to the wish of some to make all education Religious, say, "Yes, I agree with you entirely that all education must be based on Religion, and that the authority of God should be recognised by us all as the only infallible standard in everything; but, that we may know what we are talking about, let us understand distinctly what each of us means by Religion." Standing on such a basis, we cannot be shaken by either Jew or Gentile, Calvinist or Lutheran. Then comes the discussion, What is Religion? A says it is a code embracing, suppose, ten principles in all. On examination, B, C, and D find that, say, *eight* of these refer to practical matters directly influencing conduct and character, and that they approve of them as true; but each affirms that the remaining *two* are church dogmas, untrue, dangerous to salvation, and deserving of all reprobation. For these, B proposes to substitute other two; but is, in his turn, voted wrong by A, C, and D. The latter two follow with *their* substitutes, and are each condemned; all, meanwhile, admitting the eight practical principles to be sound and necessary to happiness. Here it is plain, that, if the children of all are to attend the same school, a compromise must take place; and, while all agree to leave out *the two* articles, they may cordially unite in teaching the remaining eight, and in endeavouring to insure their recognition by the pupils as their best guides, and as indispensable links in that Religious chain which binds them to their Creator, and imposes upon them the primary duty of seeking to know and do His will in all things. This done, let the parents and priests teach what they deem truth on the two disputed points, *in addition to the Religious principles thus daily and hourly inculcated and brought into practice, among both teachers and pupils.*

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[1] The following was called forth by reading George Combe's pamphlet, "Remarks on National Education," and appeared afterwards as a pamphlet, which was extensively circulated, under the title, "On the Introduction of Religion into Common Schools." See Andrew Combe's "Life and Correspondence," by George Combe, p. 499. (Edinburgh: Maclachlan & Stewart.)

It may be said that this is what is done already. But there is a difference. At present, the line of separation between Religious and Secular education is drawn sharp, and, in the school, the pupil is not taught that the natural arrangements he studies or sees in play around him, have been devised by Divine Wisdom for his guidance and happiness, nor are his feelings interested in securing obedience and gratitude to God as a Moral and Religious duty in return. The arrangements of nature are taught simply as 'knowledge' coming from nobody, and leading only to worldly advantage, not personal happiness. Religion, again, is taught not as the complement of that knowledge, leading the mind back to God, and bearing at every moment on our welfare, but as a something apart, which does not dovetail with our conduct or duties. In short, the prominent idea in the minds of both teachers and taught, under the present national system, is, that Secular knowledge and Religion are distinct, and have no natural connection; and hence neither exercises its legitimate influence.

But the result will be different if it be recognised universally that, taught as it ought to be, all the knowledge conveyed is *inherently Religious*, and calculated, *necessarily*, to bring the creature and the Creator into more immediate contact, and to develope feelings of love, admiration, reverence, and submission to the Divine will. Let it be proclaimed and understood, that the inevitable tendency of knowledge is to lead the mind to the Creator, and that, wherever it is taught without this result, there is and must be a defect of method, or a fault in the teacher, which ought instantly to be remedied. Let it be proclaimed to the four corners of the earth, that education, rightly conducted, *is* Religious in the highest degree, although embracing none of the tenets peculiar to sects or parties, and that a 'godless education' is a contradiction and a moral impossibility. It would be as logical to speak of a solar light without a sun. Every truth, Moral, Physical, or Religious, springs from and leads directly to God; and no truth can be taught, the legitimate tendency of which is to turn us away from God.

Instead, therefore, of giving in to the opponents of National Education, and admitting a real separation between Secular and Religious knowledge, I would proclaim it as the highest recommendation of Secular knowledge, that it is *inherently Religious*, and that the opponents are inflicting an enormous evil on society by preventing philosophers and teachers from studying and expounding its Religious bearings. If this were done, it would lay the odium at the right door, and show that the sticklers for exclusive church-education are the real authors of "a gigantic scheme of godless education," in attaching such importance to their own peculiar tenets on certain abstract points, that, rather than yield the right of conscience to others, they are willing to consign society at large to an absolute ignorance of the ways of God as exhibited in the world in which He has placed them, and to all the misery, temporal and eternal, certain to result from that ignorance.

It must be admitted that, *as at present taught*, much of our knowledge is not Religious; but this is an unnatural and avoidable, not a necessary, evil, and it has arisen, in a great measure, from the denunciations of the party now opposed to the diffusion of education. By stigmatising as "infidel and godless" whatever knowledge was not conjoined with their own peculiar creed, they deterred men from touching upon or following out the Religious aspects of knowledge; and, if they be allowed to maintain longer the wall of separation they have erected, the result will continue to be same as in times past. The only way to meet them is to turn the tables, and *denounce them as the obstructers and enemies of Religious education;* because they refuse to allow any exposition of the Divine wisdom, and arrangements, and will, which does not also assume the equal infallibility and importance of *their* interpretation of His written wisdom and ways. This is a tyranny to which human reason cannot continue to submit, and the sooner they are put on the defensive the better.

Science is, in its very essence, so inherently Religious, and leads us back so directly to God at every step, and to His will as the rule of our happiness, that nothing would be easier, or more delightful, or more practically improving to human character and conduct, than to exhibit even its minutest details as the emanations of the Divine wisdom, and their indications as those of the Divine will for our guidance. In a well-conducted school-room or college-hall, the Religious Sentiment might be nourished with the choicest food *pari passu* with every advance in intellectual knowledge. The constant practice of exhibiting the Deity in every arrangement, would cultivate *habitually* that devotional reverence and obedience to His will, which are now inculcated only at stated times, and apart from everything naturally calculated to excite them. So far from education or knowledge proving hostile to the growth of Religion in the minds of the young, they would in truth constitute its most solid foundation; and best prepare the soil for the seed to be afterwards sown by the parent and priest, who would then receive from school a really Religious child fashioned to their hands, instead of being, as now, presented only with the stony soil and the rebellious heart.

The practical inference from all this is, that while we continue to advocate the exclusion of *sectarianism* of every hue from our educational institutions, we are so far from wishing to exclude Religion itself, that our chief desire is to see all education rendered much *more Religious* than it has ever been, or ever can be, under the present system. To make Religion bear its proper fruit, it must become a part and parcel of everyday life. It must, in fact, be mixed up with all we think, feel, and do; and if Science were taught as it ought to be, it would be felt to lead to this, not only without effort, but necessarily. God is the creator and arranger of all things; and wherever we point out a use and pre-arranged design, we necessarily point to Him. If we can then show that the design has a *benevolent* purpose, and that its neglect leads to suffering, we thereby necessarily exhibit the loving-kindness of God, and recognise it even in our suffering. If we next point out harmony between apparently unconnected relations, and show how all bear on one common end, we necessarily give evidence of a wisdom, omniscience, and power, calculated to gratify, in the highest degree, our sentiments of wonder, reverence, and admiration. If we familiarise the mind with the order and laws of God's providence, and their beneficent ends as rules for our conduct, the very reverence thereby excited will prompt to submission—systematic submission, because cheerful and confiding—to His will as our surest trust. Here, then, is the legitimate field for the daily, hourly, and unremitting exercise of the Religious feelings in the ordinary life of man, and for the exercise of that true, vivifying, practical Religion, which sees God in all things, lives in His presence, and delights in fulfilling His will.

The slender influence of Sectarian Religion in regulating the daily conduct of civilised man, and the exclusiveness with which its manifestations are reserved for stated times and seasons, together with the small progress which it has made in leavening the mass, furnish ample evidence that some grievous error deprives it of its legitimate power, and limits its diffusion. The more narrowly we examine the matter, the more evident will it become that the sticklers for Sectarian education, as the only one allowable, are the great stumbling-blocks in the way of True Religion, and that the ignorance which they cherish is the grand source of that apathy and irreligion against which they clamour so lustily. Science by them is reviled and despised as merely human knowledge. The epithet is ludicrously false and illogical. *All knowledge is Divine.* All knowledge refers to God, or to God's doings. There is no such thing as 'human' knowledge in the proper sense of the word. What is true is of God, whether it relate to Science or Religion. What is not true is error, whether espoused by infidel or priest, Lutheran or Catholic, Mahommedan or Brahmin. Accurate knowledge (*and there is none other*) is not of human but of Divine origin. If man *invents* notions and styles them knowledge, that does not give them the character of real knowledge. They remain human inventions or errors as much as before. But whenever man discovers *a truth* either in Physics or Philosophy, either by accident or by design, he is certain that God is its author, and that, if seen in its relation to Himself and to creation, it will be found characterised by the wisdom, power, and goodness of its Divine source. Nothing can shake him in this belief. Stigmatise him as you will, his faith will remain firm and unhesitating, because he knows the attributes of God to be unchangeable and eternal. 'Godless education,' forsooth! It is an absolute contradiction in terms; and those who obstruct the progress of Religion by such an outcry have much to answer for, and little know the evil they are doing.

In times past, man has erred by acting regardlessly of God's will and plans, and his reward has been misery and crime. Instead of attempting to create and legislate, let him study and understand what God has created, and the laws already imprinted *by Him* on all that exists. If his health is to be promoted, let him take for his guidance the arrangements made by God for the healthy action of his various functions, and *act in the closest accordance with their dictates.* If he has a social duty to perform, let him consult the moral law imprinted on his nature by the Deity, and copied into the records of Christianity. If he wishes even to brew or to bake with profit and success, let him study the laws of fermentation arranged by Divine Wisdom, and conform to the conditions which they impose as indispensable for securing the result. If he wishes to provide the means of travelling with speed and safety, let him study the laws of gravitation and of motion, and those which regulate the production and expansion of steam, and adapt his machinery to fulfil the conditions imposed upon their use by the Deity himself. If he does not, he will either fail or suffer. If he does, he will move along with speed and safety. If he wishes to have his coat dyed of a fast colour, let him study the qualities which God has conferred on colouring objects, and the relations in which they stand to the properties of the [illegible] conform to their indications; and he will have the guarantee of On[illegible] his success. In short, he cannot stir in the performance of any [illegible] without either a direct or implied reference to the harmony and u[illegible]s of the Divine laws. From thoughtlessness and an imperfect education, he may neglect looking deeper than the surface, and see only man and man's inventions, where, in truth, God reigns supreme and alone, hidden from our view only by the ignorance of man. Rightly directed, then, education, instead of being 'godless,' would confer its chief benefits by removing the curtain which hides God from our view. Instead of keeping Him, as an awful abstraction, in a background too remote from the ordinary affairs of life for either clear perception or wholesome influence, as is at present done by the sectarian religionist; Science and Education would reveal Him, to the human understanding and feelings, as an ever-present, ever-acting Being, whom it was no longer possible to forget, and whose care and watchfulness over us are equalled only by His attributes of benevolence and justice.

Such, then, is the direct and legitimate tendency of that Science and knowledge so unjustly stigmatised as 'human,' and 'secular,' and 'godless!' And why so stigmatised? Merely because its cultivators and teachers refuse to mix up with it certain dogmas of an abstract nature, on which the greatest differences of opinion prevail among the numerous sects which constitute the religious world! The truths on which all agree—truths proceeding from, and leading directly to God as their author and source, and replete with blessings to man—are to be deliberately excluded and denounced, and the disputed and abstract dogmas introduced in their place! What can be the results of such a course of proceeding? If the tree is to be known by its fruit, as the Scriptures say, we can have very little hesitation in declaring the existing tree of Sectarianism to be not worth the cultivation; for the burden of the complaints of all so-called evangelical sects is, that, in spite of their utmost exertions, the cause of Religion retrogrades—so much so, that, according to Dr Chalmers' estimate, even in our highly-civilised communities, not one in twenty, and, in many instances, not one in ninety or a hundred, lives under its influence, or knows what it is. Admit this picture to be correct in its main features, does it not point to some serious error, which silently undermines our utmost exertions? And if so, why persevere blindly in the same course, and obstinately refuse to tread another and more direct, though hitherto neglected, path to the same living and true God, whom we all seek and profess to adore and obey?

It may be said that, *as now conducted*, education, when not accompanied by a creed, does not lead to God. That it does not in some schools, is true; and that in none does it go nearly so far in this direction as it might and ought to do, is also true. But this defect has arisen in a great measure from the very prohibition attempted to be enforced of giving education without a creed; and it admits of an easy remedy, the moment the prohibition shall be removed. Let it once be known that doctrinal creeds are no longer to be taught in schools as the condition of obtaining general education; but that, on the other hand, an accurate and extensive knowledge of the laws of God, as exhibited in creation, and as regulating man's whole existence on earth, will be considered indispensable in the teacher, and that his chief duty will consist in impressing on his pupils the living conviction, that they can be happy in this world only in proportion as they act in accordance with these laws, and that it is God and not man who arranges and upholds the moral laws under which society exists; and then his task will become at once more pleasing and more successful, and every day will add to the facilities and aids which he will meet with in fulfilling it. Education will then be both Moral and Religious in its every phase; and its influence on conduct, now so small, will every day become more visible, because backed by the Divine authority. Education, thus conducted, would become the groundwork of that later and more practical education which is now acquired in the actual business of life, and compared with which, our *present* school-education avowedly bears a very small value.

To insist on connecting dogmas about the corruption of human nature, the Trinity, and the atonement, with the knowledge of external creation, is to insist on mixing up matters which have no natural connection or affinity, and which, consequently, can never be made to assimilate. Let it be assumed that man has fallen from his original condition, and that his nature is corrupt, the great fact remains, that *the world was created and received its present constitution from God before man fell.* Whatever may have happened to man, the laws of the universe were not changed. The heavenly bodies moved in their orbits in obedience to the same forces which still operate. In our own globe, we can demonstrate the present operation of the same physical laws which were in action thousands or millions of years before man was called into existence. It is worse than folly, it is impiety and rebellion against the eternal God, to say that a knowledge of His works shall not be communicated except in conjunction with a disputed creed, which does not and cannot change their nature; and yet this is what must happen, if the opponents of National Education have their way. The Christian revelation does not abrogate or supersede the pre-existing order of Nature. On the contrary, it rests upon it as the only basis on which the superstructure of revelation can be made to stand; and therefore the more clearly the order of Nature is expounded, the more easily will the true bearings of Christianity be appreciated, and its principles carried into practice. To the orang-outang or the monkey, revelation is without meaning or influence, because, in *their* nature, it can find no resting-place and no point of contact. To man it would be equally valueless, if its doctrines were not in harmony with its nature and constitution. And, therefore, even if education were to be confined solely to Religious instruction, the most successful way would still be to begin by cultivating and developing the groundwork or soil of Natural Religion, in which alone revelation can take root.

If neither the state nor the people are to be allowed to teach Natural Religion, and make use of it in promoting good conduct, then it matters little who has the charge of educating the people in our schools. So long as education is confined to reading, writing, arithmetic, and the communication of the elements of knowledge, without constant reference to its uses and its relation to its Divine Author, it will prove both barren and godless, whether accompanied by a creed or not. The only education worth having is that which is to influence conduct, and thereby improve our condition. If such education cannot be taught to the young, the more urgent the need to begin by enlightening the old who direct the young. If prohibited from teaching the children, let us begin by educating their parents. By perseverance, we may produce an impression on their common sense in the course of time, and thus at last get access to schools. As yet, Natural Religion has never been taught to either old or young, and, therefore, it cannot be said to have proved ineffective. No single work exists, so far as I know, having for its aim to expound the close relation subsisting between Natural Religion and human improvement. The existence and operation of natural laws have been demonstrated, *but not their applications to, and bearings on, daily and hourly conduct.* Veneration has been hitherto supposed to have its true scope in the adoration of the Deity; but its more important and equally elevated use, in prompting to willing submission to His laws and authority, as an earnest of our sincerity, has been almost overlooked. The Religious and Moral feelings have never been made acquainted with their own intimate and indissoluble union, or trained to act with the intellect in studying and obeying the natural laws.

In a letter to Sir James Clark, of 12th January 1847, Dr Andrew Combe also says:—

My conviction is that the true sphere of the Religious and, in some degree, of the Moral emotions has been misunderstood, and that, in legislating for the moral, religious, intellectual, or physical nature of man, we forget a great deal too much that *man is a unit*—a compound unit, no doubt—but still a being, *all* of whose faculties were pre-arranged to act together in harmony."[1]

2. Mr Benjamin Templar's Views on the Subject.[2]

What is the Religion of Secular Schools?

It is, in addition to sound *Moral* instruction, the production of an intelligent, profound, and abiding veneration and love for God; and, consequently, of such a reverent, devotional frame of mind as is a constant source of the purest and most elevating joy.

But how is this done where there is no Bible?

The Secular teacher does it by directing the attention of his pupils to the evidences of God's infinite power, wisdom, and goodness, which appear in teaching, among others, the sciences of Physics, Physiology, Social Economy, and Morals.

While teaching *Physics*, he calls attention to the exceedingly useful properties of natural objects and agents; to the permanence of these properties; to the invariable certainty with which they act; and to the fact that the tendency of their properties and operations is beneficent.

For example, he shows what are the remarkable properties of heat and of gravitation, and some of the numberless important uses to which they are applied in art, science, and domestic life; and his pupils at once see that not only much of our daily comfort, but our very *existence*, depends upon the uniform, unvarying exercise of these properties, with which God, in His wisdom and goodness, has invested them. A clear perception of this never fails powerfully to excite the grateful admiration and wondering awe of the pupils.

Physiology is made to furnish even more striking proofs of creative wisdom and goodness than these. The teacher shows that every organ has some useful function to perform, and that it is fitted, in the best possible manner, for the performance of that function; and that the organs and functions are adapte to others, and to the external world, with surpassing wisdom and benevolence.

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[1] See his "Life," by George Combe, p. 509. George Combe remarks on the above expression of Dr Combe's ideas, that "the identity of views" between himself and his brother "is naturally accounted for, by the constant and unreserved communication of thought which took place between them." Ditto, p. 501.

[2] Regarding Mr Templar, see p. 241. The following is extracted from a paper on "The Religion of Secular Schools, and their Claim to Government Aid," read before the Social Science Association, at Bradford, in 1859, and afterwards published as a pamphlet.

His pupils see this, in the adaptation of the eye to the reception and exclusion of light;—of the forms of the muscles to their situations, and of their strength to the force of gravity;—of the skeleton to the supply of firmness, support, easy motion, and ample protection. They see, too, how wonderfully and how mercifully the body is provided with the means, not only of keeping its parts in a healthy condition, but of giving warning of and repairing injury as well. They see, and gratefully acknowledge, the beneficent uses of bodily pleasure and pain: sensations that deter them from doing what is hurtful, and encourage them in doing what is beneficial, to their health. Surpassingl great do they feel that benevolence to be which has not only provided us with special sensations, but which has so made one of them—that of taste—that it shall accommodate itself to the state of the organs for whose protection it is in part provided, by becoming more fastidious as they become more delicate.

Experience shows that the consideration of these, and of similar things, excites in children, as in us, emotions of the deepest veneration, gratitude, and love towards God, the all-wise and all-merciful Author of them.

Secular school teachers are peculiar for the extent to which they teach *Social Economy;* and, in doing so, they find they have a peculiarly powerfu means of *Religious instruction.*

Mark how this is. The teacher invites the pupils to a careful consideration of the numerous ways in which men labour in the production and distribution of wealth; and, from studying them, they learn the following important and impressive facts:—

Every man, while labouring to advance his own interest, is, at the same time—though quite unintentionally, and often unconsciously—advancing the interests of others, contributing to the public good; that men, so far from permanently benefiting themselves at the expense of others, can do so only by doing good to others, no matter what may be the nature of their occupation: for God has so interwoven men's interests, that not only is it true that no man liveth, or *can* live, to himself alone, but also that no man's loss can be a real permanent gain to his fellow-man. They learn, that there can be no clashing of *real* interests; that the interests of all classes, even the most opposite, such as masters and men, and producers and consumers, are concurrent instead of antagonistic,—else civilisation, with all its advantages, would be impossible. They learn, too, that national as well as individual prosperity can exist only where there is peace and mutual benefit.

My own experience, like that of others, shows that the frequent careful consideration of the phenomena of social life, such as those I have just named, produces deep thoughtfulness, and proves not only the *reality* of God's government of the affairs of men, where least recognised, but the infinite *wisdom* and *beneficence* of that government also. As none can recognise this without having their veneration for, and love and gratitude to, God strongly excited, the teacher, in revealing it to his pupils, is influencing them *Religiously.*

Lastly, the *Moral* instruction of Secular schools is made a means of Religious culture.

The pupils are taught that every rational being has certain Moral duties to nd therefore they have theirs. These duties, they are shown, are—to love and obey their parents; to be honest, truthful, kind, and obliging to all; to restrain every inordinate desire; and to train themselves to habits of cleanliness, diligence, punctuality, self-reliance, perseverance, and self-respect. In dwelling upon the reasons for these obligations, and the modes and consequences of discharging or of neglecting them, the children have their Religious emotions strongly excited by the discovery of the gratifying fact, that God has made the full and faithful performance of these duties a source of profit and pleasure to the performer, instead of a mere arbitrary task.

This is easily proved by reference to their own short experience, which has already taught them how great a pleasure is in store for those who successfully resist temptations to lie, steal, or commit any other immoral act; that the pleasures of *self-restraint* often outweigh those of self-*indulgence;* that few acts of self-gratification result in such intense satisfaction as follows resolute self-denial—the consciousness of having performed a difficult duty; and that a generous deed is never performed, nor a kind, sympathising word spoken, that is not followed by a feeling of pure, joyous satisfaction, which far more than compensates for any self-sacrifice made to perform it; and that thus "the quality of mercy" is indeed "twice blessed."

Thus, by showing that God has mercifully made our *duties* to be *pleasures*, the scholars have their gratitude and love to Him greatly increased, and they become more devotional, more *Religious*, in consequence of the discovery.

This, then, is the Religious training of Secular Schools. It leads the pupils to regard all natural objects and operations as God's agents in working out His all-wise and all-merciful plans; it teaches them to see His wonderful handiwork, not only in the structure, but also in the functions assigned to each individual and class of organised beings; it shows, what is not generally so obvious, viz., that our mental and moral natures bear as decisive marks of infinite wisdom and goodness as do our physical constitutions; and it shows, as I have before stated, not only the *reality* of God's government of all things—physical, organic, mental, moral, and political—but the boundless *wisdom* and *goodness* of that government also. In a word, it proves that an ever-present Deity is not a mere figure of speech, a poetic fancy, but a grand, gladdening reality; and leads those so taught to recognise in Him an all-wise, all-merciful Father and Friend. It imbues them with that profound, grateful devotion which is the foundation of all True Religion, and which will ever be to them an inexhaustible source of the most elevating joy, because it is the result of careful, intelligent inquiry, and of consequent deep-rooted conviction. Now I submit not only that this *is* Religious instruction, but that it is Religious instruction of a high order.[1]

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[1] The whole paper from which the above is extracted is very well worth perusal. See also on the same subject, Mr Templar's "Questions for School Boards," and "The Religious Difficulty in Education," (London: Simpkin, Marshall & Co., 6d.) which are short, practical, and excellent, embodying the results of experience in the Manchester Free School, on this and other points.

No. III.—THE PRINCIPLES OF EDUCATION ILLUSTRATED.

1. Extracts from the Reports of the Edinburgh Secular School, *founded by George Combe; written by W. Mattieu Williams, Head-Master.*

Referred to in the Introduction, and at pp. 213, 215, 217, &c.

I. MORAL EDUCATION.

1. A School conducted without Corporal Punishment.

The principal difficulty the teacher has experienced has been in maintaining order and discipline, without resorting to corporal punishment, or other severe measures. It is easy to maintain silence in a school, by the simple expedient of flogging any child who makes a noise; but to lead the children to control their own boisterous and desultory playful tendencies, by the force of a conscientious feeling of duty and an ever-active sense of propriety, requires some time, and much patient careful training—especially when some of the children, from having been accustomed to harsh discipline, both at home and at the schools they have formerly attended, have been trained to base their self-restraint on the fear of corporal punishment alone, and have thus become, to a great extent, insensible to other motives. On this account, it has been found necessary to have occasional resort to corporal punishment in extreme cases of disobedience; but it is hoped that there will shortly be established a general moral tone among the children, sufficiently strong to obviate entirely the necessity of this most objectionable means of discipline.[1]

Corporal punishment is now[2] *entirely excluded* from the school discipline, and the teacher pledges himself never again to have recourse to it. The promoters were adverse to it from the commencement, and the circumstances which led to its adoption at first were the following:—Previously to the opening of this seminary, Mr Williams had never had a school under his own management, but had been trained at the Birkbeck School of the London Mechanics' Institution. Like many persons who have considered this subject theoretically, he objected to physical punishment; but, on discussing it with practical schoolmasters, he found them most unanimous and earnest in rejecting such views as Utopian, and in insisting upon the impossibility of efficiently conducting a large school, without using direct physical chastisement, or some painful substitute for it equally objectionable. They told him that, if he attempted to conduct a school of the kind proposed, failure would be inevitable, if he were not allowed to use corporal punishment. As many of the individuals whom he consulted were men for whose judgment he had the highest respect, he was unwilling to oppose a merely speculative opinion of his own to their practical experience, and he therefore declined to undertake the charge of the school unless allowed to use physical chastisement, if found necessary. The promoters yielded to him on this point, on the understanding that the infliction was to be dispensed with, if possible.

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[1] From First Report, published in 1850, p. 8.

[2] In 1851, when the Second Report was published.

At first, considerable difficulties did arise in controlling the children, because, from never having been accustomed to entertain even the idea of self-control, they regarded freedom from stripes as an invitation to anarchy. On several occasions, therefore, corporal punishment *was* resorted to, and the immediate result was better order in the school. Every time, however, that order and obedience were thus enforced, the teacher perceived and felt, with unequivocal distinctness, that the outward semblance of improvement was obtained at the cost of a moral sacrifice, both on the part of the children and himself. The enthronement of physical force produced a slavish submission in the children, and a degrading influence on the teacher. The hush and show of diligence which the punishment occasioned, could be maintained only by repeating the infliction; and, in proportion as it became familiar, its restraining power diminished, while its demoralising influence daily acquired strength. This experience led to a suspension of chastisements from about the month of February to the termination of the session, at the end of July 1850. The school re-opened in the end of August, and, in September, there was an influx of new pupils, most of whom had been accustomed to yield obedience only to blows. Considerable disorder consequently ensued, and, on one occasion, it had reached to such a height that four of the boys were sentenced to receive two "palmies" each (*Anglice*, stripes on the hand). Among these was one boy who had been a considerable time at the school, but who had proved almost unmanageable, owing chiefly to his very remarkable deficiency of Cautiousness. He was intelligent, and endowed with about a medium development of the Moral Sentiments, and much Adhesiveness. He was strongly attached to the school and to the teacher, but he disturbed all discipline by playing grotesque antics, making queer noises, and giving absurd, though sometimes witty, answers to the questions put to the other children. All this was attributable mainly to an utter disregard of the consequences of his own actions, either to himself or others. On the occasion referred to, he was one of the principal offenders. When it came to his turn to receive the "palmies," he, to the surprise of the teacher, began to cry most bitterly, imploring, with the greatest earnestness, that he might not be punished. "No, no, no, maister; dinna, dinna lick me, maister; no, no, no, maister, I'm no sae bad as that." He repeated the expressions again and again, in tones of positive anguish, to the great perplexity of the teacher; for it was quite clear that the fear of physical pain was not the cause of his distress. He had seen that the punishment inflicted on the other boys was slight, and his own careless indifference to pain is most remarkable; so much so, that he often comes to school bruised and bleeding in consequence of his utter recklessness in play, and he seemed to regard the floggings he received at home as a sort of customary excitement. It was clear that the pain he manifested on this occasion was purely moral; that the tie which bound him to his teacher—who was perhaps the only person who had ever attempted to govern him by a really moral influence—was in danger of being broken; and that, in his own estimation, he was exposed, by the punishment, to a miserable degradation.

The teacher felt that the degradation was by no means limited to the boy, but that the larger share of it was his own; and, although compelled to inflict the punishment in this instance (the boy having been sentenced with the rest who had already suffered the infliction), he determined never again to have recourse to this most painful remedy for insubordination.

This resolution was confirmed by the general tone which pervaded the school for a day or two after the event; for, although the punishment was not inflicted in presence of the rest of the pupils, they knew that it was going on; and, when the teacher returned among them, they were certainly much more quiet and orderly, but it was a gloomy and sullen quietness—the superior minds seemed instinctively oppressed with a feeling that they were to be governed by a degrading influence, while the inferior sulkily obeyed, merely because they were afraid to do otherwise. The evident tendency of the infliction was to make the latter regard disobedience as a sort of forbidden enjoyment, to be snatched when favourable opportunities occurred.

The teacher has very carefully observed and reflected upon the results of the two experiments of governing the school, with and without corporal punishments, and is convinced that those which are usually held forth as the advantages of corporal chastisement are in fact dangerous and delusive evils. Its direct influence on the pupils is usually demoralising; and on the teacher, and through him, on the school, invariably so.

The very facility which it affords of suppressing at once inattention, disorder, and a tendency to disobedience, is particularly mischievous; for it blinds the teacher to the real cause of the evil, which is most commonly some defect in the detailed or general management of the school, or some want of energy or skill on his own part.

If he is not permitted thus to repress the outward symptoms of these deficiencies by "making an example" of the most troublesome pupils, he is compelled to seek out the radical cause of the mischief, and to apply the true and permanent remedy. Thus, when teaching is an everyday occupation, the teacher is continually liable to fall into habits of mechanical and plodding routine, to lose sight of first principles, to slacken in enthusiasm, and manifest a moral slovenliness which tells immediately upon the school. If he represses this by physical chastisement, he evades the effort of self-correction, and is likely to gradually degenerate. If he has no such means to fall back upon, he is compelled continuously to maintain his efficiency, and to advance instead of retrograding.

The position of the schoolmaster is one of peculiar difficulty, in respect of the danger to which he is continually exposed of degenerating into a petty tyrant. Every candid teacher of young children will admit that he has felt this tendency creeping upon him, and, unless he be ever on his guard, he must become corrupted by it. The words *dominie* and *pedagogue* suggest at once to the mind the image of a despot and pedant; a man, perhaps, of natural good qualities spoiled by the habitual exercise of irresponsible authority. It is melancholy to contemplate the number of schoolmasters who, as they grow old in the service, sink into this deplorable condition. It is easy to understand how an excellent man may thus degenerate, when we consider that he is surrounded only by children whom he is bound to govern, and of his superiority over whom he must be conscious. He is tempted to set up his own will as law; to enforce obedience to his commands, simply because he is master, rather than because his commands are just and beneficial. Unless he keeps the strictest watch upon himself, he will be apt to praise or blame, to punish or reward, according as it suits his humour. Few men can look back upon their school days and not remember how they watched the features of their master when he entered school, and calculated their own chances of smarting during the day, by the expression of his morning countenance. How many boys' backs have been made to sympathise with their teacher's stomach, when he has been suffering under a fit of indigestion! The teacher of this school has been specially anxious to guard against this tendency, and, from careful consideration of his experience in this respect, is convinced that none but men of most rare and almost impossible constitution can remain free from some degree of such corruption, if they permit themselves to enforce the submission of their pupils by any form of physical chastisement.

When no such punishments are permitted in a school, the teacher is compelled to govern with justice and moderation, and to regulate the energies of his own will; in short, habitually to govern himself as well as his pupils. When he ceases to do so, he is immediately admonished by a spirit of insubordination; and, as he cannot now *suppress* it by means of his muscular superiority, he must *remedy* it by his moral influence,—by removing the cause which has produced it. If he is unable to do so, and the insubordination ripens into rebellion, proof is afforded of his incapacity; and he should either undergo further training himself under an abler man, or seek some other occupation for which he is better fitted.

When corporal punishments were first excluded from the school, the teacher thought that some means of correction were necessary to keep the more disorderly children in subjection, and occasionally one or two of the most refractory were imprisoned or fixed to a post. All such punishments are now set aside; and the practical conclusion drawn from comparing the results of those experiments is, that *the infliction of punishment of any kind whatever as punishment*, or, in other words, direct and exclusive appeals to the nerves of sensation and the Sentiment of Fear, are not only unnecessary, but decidedly mischievous. All that is required is simply to place the offender under training, that is, to exercise the faculties manifested in deficiency, or to repress those which are manifested in excess. Such training is necessarily painful, but this pain is instituted by the Creator as an element of the human constitution, and is a sufficiently intense, and far more effective, appeal to selfishness and fear, than any of the artificial devices for inspiring terror, which are commonly resorted to.

Special care is now taken to make the children understand when they are under discipline, that they are being *exercised*, not *punished*, by the teacher; that, if the exercise is painful, the pain is a warning instituted by their Creator, to prevent them from infringing His laws, which, if they obey, will afford them continual happiness.

It may well be conceived that, during the transition from the one system to the other, the school may present an appearance of order inferior to that which is found in seminaries in which the lash is vigorously applied; but every year is reducing the difference, and the moral gain is incalculable. The most earnest efforts are made to enable the children to understand the principles upon which their education is conducted, and to lead them to co-operate intelligently with their teachers in all their efforts. Thus, when children disturb the discipline of the class by a fidgety want of self-restraint—shown talking during the lesson, and moving from their place—they are told to stand out of their class, because they disturb those who are diligent, and they are exercised in simply standing still with their faces to the wall, and hands behind their backs; and the duration of this exercise (which is sufficiently irksome to make them very anxious to escape from it) depends on the degree of self-control they exhibit in obeying this extra discipline.

The time thus lost from their lessons is, as far as practicable, made up by extra duty during the play hour. Wilful idleness is treated by giving the offender additional work during the play time, always upon the understanding that it is not merely for the sake of punishing him, but as extra training in habits of industry. Children who come dirty to school are publicly washed. When two children cannot sit beside each other without playing together, they are separated; but, when they quarrel, they are made to sit or stand side by side, sometimes hand in hand together, until all angry feeling has given way to cheerful friendliness.

In the case of troublesome and wilful children, it is found useful to explain, plainly and truthfully, the sources of their conduct, in presence of their fellows. If a boy is impertinent and tries to display his supposed superiority by braving the authority of his teacher, or if a girl is pouting and sulky, the teacher points out to the class that these are illustrations of misdirected Self-esteem and Love of Approbation, and asks the children what are the proper uses of these faculties. When they answer that it is to give dignity and amiability to the possessor, he asks them whether the conduct of the offender is dignified and amiable or the reverse.

In the case of quarrelling, they are questioned upon what is the difference between the brain of a dog or any of the lower animals and that of man. They answer, that man possesses a greater development of the Anterior and Superior regions, where the organs of the Intellectual and Moral powers are situated, and upon that depends his superiority to the brute. They are then asked what a dog does when his will is frustrated, or he is in any way annoyed by another dog. Fight, and the strongest and most active conquers. What must man do in a similar case?

Thus the great object of the system pursued in the school is, to train the children to restrain and direct their own faculties by self-conscious efforts, under the dictates of their Moral and Intellectual faculties.

The teachers and promoters anticipate more beneficial results from this method of governing and training, than can be obtained from habits of obedience produced by corporal chastisement. When the child is removed from the dread of the latter, he eagerly indulges in all those acts of insubordination and transgression which were forbidden; he enjoys a jubilee of mischievous an misdirected gratification of his Propensities. Under the system of moral restraint, the child is early accustomed to weigh his actions and their consequences, to feel that he lives under Divine laws, and that natural punishments await his transgressions, which he cannot escape, although no human avenger be present.

It is hoped that, by these habits of self-control, founded upon perception of consequences, the pupil will in time become a considerate moral agent, capable of regulating his conduct according to the rules of morality in all the ordinary circumstances of life.[1]

In the last Report, it was stated that the corporal and other severe punishments had been entirely given up, and that this was attended with the most satisfactory results. Another year's experience adds fresh testimony in confirmation of this statement.

From the commencement of the school, the principal difficulty experienced has been to maintain strict order, without unduly repressing the activity, energy, and natural cheerfulness of the children; and the teacher's aim has been to make the discipline consist in *directing* the exuberance of youth in such a manner as to communicate animation and earnestness to the prosecution of the school duties, instead of crushing that exuberance by harsh severity, and introducing, in its place, dull, unchildish inactivity.

Ever since corporal punishments have been abolished, this difficulty has been steadily diminishing. At present, in so far as it exists, it is attributable chiefly to new comers, who have been accustomed to severe treatment in other schools, and, in consequence, manifest a tendency to break out wildly when at first released from this restraint. The troublesome pupils are mostly boys of from twelve to fourteen or fifteen years of age, some of whom have been sent here because they have been found elsewhere unmanageable. The month of November has always been the period when the tendency to disorder has been the greatest. This seems attributable to the fact, that during September and October, especially in the latter month, a large number of new pupils join the school. At first, they are restrained by the novelty of the situation; but, on becoming more familiar with it, and perceiving that there is really no flogging in the school, they begin to break out into disorder. After a short time, however, they become interested in their lessons, the example of the children of the previous season begins to act on them, and this tendency gradually diminishes.

In some instances, younger boys, who, at other schools, have been rebellious and intractable, and have, (after repeated and unavailing floggings,) been dismissed, have here become attentive and anxiously obedient, manifesting both energy and activity, which, under kind treatment, has spontaneously taken a beneficial direction. There are children with large and active brains, in which the Intellectual, Moral, and Animal organs, more especially Conscientiousness, Firmness, Combativeness, and Destructiveness, are all powerfully developed. The effect of flogging on such children is highly injurious. It excites in them a feeling of savage resentment, and drives them into a state of moral outlawry; while, with firm but kind treatment, they might be made at least moral and respectable, if not even superior men.

In other cases, boys who have been notoriously troublesome at other schools are more or less so here. These pupils are characterised by general deficiency of the Moral region of the brain, or of Cautiousness.

A few extreme cases of melancholy deficiency, approaching to moral idiocy, have been presented. All of these have, for the first few weeks, played the truant repeatedly, sometimes absenting themselves for two or three days; sometimes, on a sunny day, they have slipped out in the middle of school hours.

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[1] From Second Report, published in 1851, p. 10.

The usual course adopted in these cases has been to ask them, why they did not come to school, whether any body had used them ill there, whether being at school made them uncomfortable, whether they disliked the teachers or their schoolfellows, whether they thought it better to come to school and learn to be clever and useful, or to run away and be useless dunces and blackguards. In a short time, these questions penetrate their understandings, or touch their feelings; and, as they are not beaten, they begin to comprehend the idea that, by running away from their lessons, they themselves are the only sufferers. In time, they leave off playing the truant and become reconciled, and some of them at last attached, to the school; so much so, that the threat of dismissal was found to be the most powerful means of influencing them that could be used.

The extent to which an attachment to the school has grown will be understood from the fact that, in some cases, children of this kind, who at first could not be restrained from playing truant, have been so completely reclaimed in this respect that they have come to feel mere putting them outside the school door, when they have been troublesome, as a severe punishment. Instead of running away to play, they have stood at the door-post crying, and actually begging to be let in again. In such children as these, Adhesiveness, along with the other organs at the base of the brain, are usually largely developed, and it is through this feeling that they are most capable of being influenced.

Some time ago, a boy of this sort, about seven years of age, was brought to the school and entered as a pupil. The next day, he did not make his appearance, of which notice was given to his parents. On the following day, he was brought, screaming and kicking, to school by a servant. It was with the greatest difficulty that she at last succeeded in dragging him in. The teacher spoke kindly to him, but the child slunk away, evidently suspecting that the kind words were only a decoy, to get him within striking distance; for, with an expression of fear, cunning and fierceness, very much like that of a hunted animal when brought to bay, he crouched in an attitude of defence, with his arm held over his head, to ward off the expected blow. No blow was given, and the teacher then left him; after which some of the children about his own age, whom curiosity had attracted to the spot, were allowed to congregate round him. When they came near him, he at first kicked and struck at them, but, in a short time, they succeeded in rendering him more pacific, by telling him that he would not be beaten.

A glance at his head showed a great development of Adhesiveness, with very large organs of Cautiousness, Destructiveness, Secretiveness, and of the other Animal Propensities, combined with extreme deficiency of the organs of the Moral Sentiments. The teacher took him by the hand, and asked him if any one had beaten him. He replied that his parents beat him. The teacher remarked that he was very sorry that he had been beaten, and asked the boy a great many questions, expressing at the same time sympathy and interest in all his troubles. When the child's feelings were fairly roused, the teacher made an offer of friendship and protection, promising to intercede with his parents, and to do everything possible to save him from further beatings, on condition that he would prove his friendship and affection to the teacher by being obedient and attentive. A considerable time was necessary to make him understand and believe this to be a real proposal. At first, he looked cunning and sulky, and made no answer to any of the questions put to him, evidently suspecting that all this was the prelude to a flogging. He then stared strangely, as at something that he was quite unaccustomed to, and finally began to cry, and at last clung to the teacher with a touching expression of affection and submission. After this, he came to school willingly by himself.

He continued, however, to be troublesome, kicking, thumping, and pinching his schoolfellows, and otherwise disturbing his class; but all the time he remained at the school (about six months, when he was taken away by his parents without any reason being assigned), he manifested a most remarkable and dog-like attachment to the teacher, watching his every movement, and making strong efforts at good behaviour when directly under his eye. When the school was dismissed, he would generally wait about the doors until he received some recognition, a word of encouragement, or a pat on the shoulder from the teacher, and then he started off quite happy.

Much may be done to improve the character of such children as these, if proper means be adopted; but it does not seem possible to render them capable of independent Moral self-restraint when placed under circumstances of strong temptation; and, in a school like this, where special arrangements cannot be made to meet individual cases of the kind, they interfere so much with the general business of the classes, that in justice to the rest of the children it is sometimes necessary to dismiss them. This is especially the case when they manifest a strong propensity to theft, which is a common tendency where the Moral restraining powers are so very weak.[1]

One of the consequences of the abolition of corporal punishments, and the general absence of repressive discipline, has been to afford the teachers many opportunities of observing the natural characteristics of the children, which, under a system of severe external restraint, would have been lost. Among the obstacles which have stood in the way of the general progress of the Science and Art of education, there is probably none which has had a more injurious influence than the common mistake of teachers, in believing that their business is only to teach their pupils, and that they have nothing to learn from them; that the children are to be modelled to their "system," instead of their systems being carefully adapted to the natural requirements of the children. Every teacher needs to be continually taking lessons from his pupils: for it is only by careful observation of the natural phenomena, presented by the growth of the infant mind, that the laws of its development can be learned; and it is upon these laws alone that sound teaching must necessarily be based.

In order to make such observations intelligently and profitably, the teacher will find it a great advantage to himself to be acquainted with the principles of general and cerebral Physiology. Many circumstances have occurred in this school which illustrate strikingly the advantage of this knowledge. Thus it is well known to Physiologists that during periods of rapid growth the brain, as well as the other bodily organs, is weakened. It seems that the vital energies are largely consumed in supplying the general increase of material to the body; and it has been clearly established that, in this condition, the effect of forcing the brain or any other organs into a degree of activity, beyond that which their diminished strength can easily support, is injurious to health, and, in some cases, may even prove fatal to life.

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[1] It will be difficult to provide for the proper treatment and disposal of such children until society becomes acquainted with the Physiology of the brain. The annoyance, loss, and expense which they occasion, are the natural consequences of the treatment which they receive, bearing little reference to their inherent dispositions.—(Mr Williams.)

In schools where set tasks are given, and flogging is resorted to when these are not performed, such consequences are liable to occur. The teacher assumes that, if a child has been able to do a certain amount of work at one time, he can do the same at any other time; and when he does not do so, the falling off is attributed to wilful laziness, and the rod is applied as an excitement, without further consideration or inquiry. The fear of physical torture may drive the child to overstrain its faculties, just at the period when such violent efforts are specially dangerous.

The observations which have been made upon the children in this school have shown that these constitutional changes are of frequent occurrence. A boy or girl who has been remarkable for activity and intelligence, occasionally, and in some instances suddenly, becomes comparatively dull and stupid. This is usually accompanied by a peculiar expression of the countenance, which it is very difficult to describe, but which may be recognised by an experienced observer who has carefully watched the phenomena. The features become relaxed and have a less plump and youthful appearance than formerly; they acquire a more serious, or, in some cases, an anxious and languid expression. The appearance differs from that produced by a cold, a temporary fit of indigestion, or other similar disturbances of the system, and somewhat resembles —only in a minor degree—the change which, in mature years, we recognise as occurring in the look and gait of a man of broken fortunes, whose mental energies have sunk under his affliction. It still more closely resembles, is, in fact, very similar to, the expression which physicians recognise as accompanying chlorosis.

At the time when these remarks are being written, such a change has come upon a boy who, a fortnight ago, stood the highest in the school for general attainments, activity, and intelligence. He could frequently answer questions which all his class-fellows had failed to solve, and he usually did so with great eagerness. *Now*, when a question requiring any considerable effort of reflection is put to him, he shakes his head languidly, with a melancholy, exhausted expression, indicating the greatest aversion to intellectual effort, which contrasts strikingly with his manner a few weeks since. In algebra, he has quite fallen back; the effort required to express a problem, in the form of an equation, is painful to him, although formerly he took great pleasure in such exercises, and frequently borrowed the book that he might amuse himself with working such problems at home. He was rather troublesome, and sometimes in disgrace on account of his boisterous and trickish activity. He is now most tame and orderly; his voice, which frequently required to be hushed, is now scarcely ever to be heard. In a few months, all this will probably be explained by the protrusion of his arms and legs beyond the limits of his jacket sleeves and trousers.

It is possible that this boy might, by using great severity, be forced to go through his usual amount of work; but the consequences of such overstraining of the brain at such a critical period might prove to be its permanent enfeeblement, and probably a serious derangement of the whole constitution.

In schools in which flogging is constantly used, it is not uncommon to attribute such changes in the conduct of children to obstinacy, sullenness, and wilful idleness, and to flog them with the greater severity, in order to drive the dogged fit out of them. This fate sometimes overtakes even the "dux," upon whose attainments the credit of the school is often based, if he happen to suffer under one of these constitutional changes, and refuse to make the same efforts as formerly. In schools, again, where corporal punishments are "*only occasionally used in extreme cases*," it is probable that a large proportion of these "extreme cases" are instances similar to the one above quoted; especially as this disturbance of the constitution is frequently (perhaps always, *when the brain is overtasked*), accompanied by peevishness and irritability, such as commonly accompany illness, weakness, or constitutional disturbance. It is liable to break out in sulky or impertinent answers to the teacher when scolding the boy for his shortcomings, and this is punished by a renewed chastisement. Most teachers who have themselves enjoyed robust health in youth, if untrained in the Physiology of the nervous system, cannot conceive the feelings of oppression, injustice, hatred, and disgust, occasionally of fierce revenge, which this severe discipline engenders in nervous, delicate, and high-minded boys. The sense of the wrong done them never leaves them throughout their lives.

Another instance of recent occurrence may be mentioned as illustrating the mischievous consequences of beating children in school. A boy, twelve years of age, was brought to the school about six weeks ago by his uncle, an intelligent man, who had studied Physiology. He stated that the boy had had a severe illness, at the close of which he returned to his former school, but became dull and stupid; he was beaten daily, in consequence of the remissness attending this state; but, instead of improving, he not only continued to lose ground in regard to his intellectual attainments, but was reduced to such a state of nervous irritability and feebleness, that he was unable to make any mental effort without crying and trembling. The uncle ascribed the change to cerebral disturbance produced by the illness, and prevailed on the boy's mother to try him at the school in which Physiology was understood and acted on. This was done, and the soundness of the uncle's inference speedily became evident. The teacher, as is usual with new pupils, gave the boy a book to read, and asked him a few questions, in order to ascertain how far he was advanced. He cried and trembled so much, that, although he evidently knew the words in the book, he was unable to pronounce them, except in a very slow, stammering, and blundering manner. He was treated with the greatest kindness; the other teachers and monitors were told not to press him, but to let him do the best he could in his own way, and the other children in his class were made to understand that he was unwell, and that his crying was a consequence of illness, so that their sympathy also was enlisted in his favour. The crying and trembling continued for some days, but regularly diminishing; and now, at the end of a few weeks, these symptoms have entirely disappeared, the expression of his countenance has changed, he has become cheerful and happy, he speaks out plainly and boldly what he has to say; and, although he is still rather dull and inactive, the improvement he is making is so satisfactory, that, in all probability, he will ultimately reach a fair average of capacity and attainments. Had he been much longer subjected to the treatment he was receiving, insanity, idiocy, or death, might have been the result.

Two cases lately occurred, almost simultaneously, which show how greatly ordinary Physiological causes influence the mental powers of children. A boy and a girl, no way related, were for some time absent from school, suffering from fever. The boy was one of the most intelligent and advanced in the school; the girl was moderately so, but by no means remarkable. When they returned after their illness, the boy had seriously deteriorated in mental power and activity, which, however, he is gradually regaining; the girl, on the contrary, came back remarkably improved in intellectual capacity, and she now takes the decided lead of the girls in answering the more difficult questions in all the lessons on Science. These differences of result may probably have arisen from differences in the kind or severity of the fevers, or in the conditions of the children; and they are mentioned only with a view to enforce the necessity of a knowledge of Physiology to every one who undertakes the training and instruction of the young.[1]

In the Fourth Report, Mr Williams says :—

The children seem to work more spontaneously, and to require less watching and driving than most boys—as might be expected, from not having, at school, been dependent on the stimulus of the lash, but trained to act from the motives suggested by their own intellectual convictions and sense of moral duty. This should always be remembered in considering the influence of corporal punishments, and of governing by fear and despotic authority in school: for, even if it could be proved that a boy could be made to do more work, and to be more orderly in school, by means of such discipline, its superiority would not be thereby established; for, when the rod is withdrawn, as it must be when he leaves school, his habitual motive to exertion and self-restraint is gone, and he has then to commence the most important, the fundamental part, in fact, of his education, viz., the getting a habit of acting from a sense of duty, and a perception of the *natural* consequences of his conduct. The child, who in school has been trained habitually to act from these motives (which, unlike the rod, he carries with him wherever he goes after leaving school), even though he was less orderly, and less industrious and attentive as a pupil, than the boy who has been flogged up to the required standard of school discipline, will be better prepared to profit by the discipline of life, which will naturally become more effective as his responsibilities increase, than the other who enters the world a stranger to such motives of action.[2]

In reply to an inquiry made to him regarding his practice in connexion with corporal punishment, Mr Williams writes, in 1851, as follows :—

In no case do I have recourse to physical chastisement, and have pledged myself (voluntarily) never to use it, and this the children are well aware of. This has been the case for about a twelvemonth, or rather more.

Formerly, I used it only as a *dernier ressort* in extreme cases, but I find it much easier to do without it altogether; for, when physical punishment is used at all, the children seem to think that the teacher is not in earnest till he threatens them with it, and, if he threatens without carrying out his threats, he loses control most seriously, so that, if he flogs at all, he must do so pretty frequently, and thus brute force becomes enthroned, and moral influence sinks into abeyance.

Corporal punishment is, no doubt, the shortest and easiest way of obtaining an outward obedience, and a general appearance of order and discipline; but, of course, it is the reality of moral discipline we seek for in our Secular Schools, and not merely a soldierlike exhibition of the children.

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[1] From Third Report, published in 1852, p. 22.

[2] From Fourth Report, published in 1853, p. 16.

I should most earnestly advise every teacher to burn the tawse, and have done, resolutely and for ever, with corporal punishments. He will probably find that some little disorder will immediately follow the change, but he must not think that this is the result of the reformation, but rather the bad consequences of the old system, manifesting themselves more decidedly during the period of transition. He will also have a little additional work to do, but he will be amply repaid for that, in the moral comfort he will daily experience in consequence of his improved relationship to the children; for, when he teaches them that pain is a natural consequence of misconduct, and that his office is to aid them in averting such pain, both present and future, they will regard him with far better feelings, and, when he conscientiously carries this out in practice, his feelings towards them will be equally improved. The idea of deliberately beating any of my little ones, seems *now*, to me, so unnatural and brutal, that I can hardly conceive anything more revolting.

All the punishment that is required is to practically teach them the consequences of their own conduct. Thus, if a child interrupts the class by talking, playing, or otherwise, he must be sent out of it (I usually stand them with their faces to the wall, that they may not see and play with the rest). When thus sent out of the class, he loses his lesson; this loss must be made up by keeping him in to work during the play-time.

The children may easily be brought to understand that this sort of punishment is self-inflicted, not at all inflicted by the teacher; he is only doing his duty as a teacher, not as a punisher, for he could not teach the rest while they disturbed the class, and, as they refused to be taught during the school time, he must teach them at the play time. When I first began this, an impudent fellow cried out one day, 'Eh, maister, you're keept in as well as we are!' I replied that that was quite true; that they thought that I was keeping them in, but, in fact, they were keeping me in, and that I was hungry and wanted my dinner, and it was very unkind of them to serve me so, after I had been working so hard all day to make them good and clever boys. This had a great effect upon the six or seven present; one suggested that I should give them all palmies and let them go, and then I could get home to my dinner; and, though they were some of the worst boys in the school, I believe they would willingly have received palmies all round as a means of letting me off to my dinner, for, in matters of simple feeling, children are far superior to us adults.

In the Second Annual Report of the school,[1] you will find a tolerably full exposition of my views and experience on the subject of corporal punishment. The more I observe and reflect upon the subject, the more deeply I become convinced of the fundamental importance of entirely abolishing it, and, I have little doubt that the teachers of your Secular Schools in Glasgow will have equally strong convictions in this direction, if they fairly, and for a sufficient time, try the experiment of ruling the school entirely and avowedly without it.[2]

It has always been regarded as a primary object in the government of the school, to maintain discipline without repressing the natural buoyancy and joyfulness of childhood, and to enforce obedience, and the authority of teachers and monitors, without anything approaching to slavish fear. The full realisation of this, in a school where there are large numbers of children, who, for the most part, have been accustomed to a harsh and severe discipline, and, therefore, to regard disobedience and riot as a sort of holiday pastime,[1] is a matter of considerable difficulty; but, from the commencement of the school, this difficulty has been continually diminishing, and a steady progress made in the desired direction.

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[1] Already quoted p. 680 *et seq.*

[2] From letter to Mr James M'Clelland (see p. 220), of 8th December 1851.

This is strikingly exhibited in the healthy public opinion which is now firmly established in the school. Some children are sent to this school merely because they are found unmanageable in other schools. It seems that some parents, unacquainted with the principles upon which the school is conducted, or having no sympathy with them, who have a boy that has rebelled against all control, both at home and at the various schools to which they have sent him, consign him, as a last and desperate resource, to the Secular School.

In some instances, this has been candidly avowed when the boy has been brought to the school. One poor woman concluded a long account of her son's transgressions by saying, in a melancholy tone, "I am sure, sir, we have done our duty to him, for his father *gives him his licks* (*Anglice*, flogs him) every day whenever he comes home from his work." She then stated that she did not approve of the school exactly, but that she had been recommended to try what it could do for him. The teacher advised her to discontinue the "licks," but the advice was evidently received with very little respect, and, when he told her that no flogging was used in the school, she seemed inclined to take him back, but finally resolved to try its effects on him for a half-quarter. The boy, who was a reckless, energetic fellow, with a low but powerful organisation, commenced his career by swearing at some of his schoolfellows. This was immediately reported to the teacher, and he was ordered to stand out from his class, and remain separated from the rest of the children, until he could behave himself respectably, and become fit to associate with respectable boys. He at first refused to stand out, and looked round to the other boys, evidently expecting them to sympathise with him and admire his bold disobedience, but he found nothing of the kind; on the contrary, several were earnestly urging him to do as he was bid, by making signs and pushing him. He was evidently surprised and bewildered at this; he stared about for some time, but, finding himself quite alone, without any sympathy, and the teacher simply waiting for him to obey as a matter of course, showing no tawse and using no threats, he became quite confused and dispirited, and, having thus nothing to stimulate him to resistance, he passively and mechanically walked to the corner where he was told to stand, put his hands behind him, to turn to the right and to the left, &c., all of which he did mechanically,[2] like the patient of a mesmeriser, and was evidently lost in amazement at his own docility. The next day, he was brought up on a charge of challenging a boy to fight,—the same who had told of his swearing the day before. He was again separated from the rest, and told that he was separated in order to prevent the unpleasant consequences of quarrelling. He obeyed immediately this time, but mumbled some threat about "outside," and what he would do to the boy when he got him there. In consequence of this, he was kept in school during the play-time, until he promised not to molest the boy, and then he was let out to join the rest. He kept his word, and told the boys that it was the queerest school he had ever been to, and that he would rather have "palmies" (stripes) than be sent out and talked to in that manner.

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[1] The school, being situated near the Cowgate of Edinburgh, was attended largely by the very poorest and lowest classes.

[2] It is found, in cases of this kind, very desirable to take advantage of this passive, docile state of mind, and put the child through a series of mechanical exercises like military drilling, for the sake of inducing the *habit* of obedience.—(Mr Williams.)

This case is described, not on account of its singularity, but as a well-marked type of a large class of cases, where boys of a rebellious disposition have been prevented from any manifestation of active disobedience by the force of the public opinion among the pupils co-operating with the teacher, and leaving the offender in a state of moral isolation, which has so depressing an influence on organisations of this kind. If this boy had received from his school-fellows the least encouragement or sympathy in disobedience, he would have rebelled outright, by refusing to stand out in the corner when told in the first instance.

Previous to the last year, three such cases had occurred since corporal punishments were abolished in the school; these were of boys who had refused to stand out when told, and they were immediately dismissed from the school. Two were taken back again after an explanation with the parents, and never repeated the disobedience. The third was a boy of about fourteen years of age, who got a situation shortly after his dismissal.

During the past year, 148 new pupils have entered the school, but no such case has occurred. This fact affords a sufficient answer to the question which has frequently been put by other teachers, who think that flogging cannot be dispensed with, viz., "How would you act if a boy should flatly refuse to do what you tell him?"

During the first year and a half, when corporal punishments were used, such disobedience was much more frequent, the rule being, that corporal punishment was applied only in cases of disobedience; and it would seem that the tendency of this rule was to induce rather than suppress it, for the facts stand thus: During 18 months with corporal punishment, and an average attendance below 100, some 15 or 20 cases of disobedience occurred; during the next 18 months without corporal punishment, and an average attendance of about 140, 3 cases of disobedience occurred; during the last 14 months, with an average attendance of above 160, and no corporal punishment, and the fact of its having ever been used in the school being nearly forgotten, and looked back upon as a curious barbarism of ancient times,—not one case of disobedience.

It must not be inferred from the above, that any encouragement is given to the children in idle tale-bearing. They are encouraged to restrain each other in play, and to use every effort to save their school-fellows, as well as themselves, from present and future disgrace and trouble, by urging and aiding each other in diligent application to their school duties; but, at the same time, they are taught that, when any serious breach of discipline or any immorality, beyond their power of suppression, is committed, it is their duty to inform the teacher, and that, in so doing, they are not acting unkindly to the offender, but doing him the greatest possible service, as the teacher never inflicts any pain that can be avoided, but only endeavours to prevent the repetition of conduct which, if continued, must induce habits which will lead to serious degradation and suffering hereafter.[1]

2. THE GENERAL MORAL TRAINING AND INSTRUCTION OF THE SCHOOL.

In all the classes, except the sewing, the boys and girls are taught together.

In philosophical subjects, the progress of the girls is not equal to that of the boys. Their inferiority is shown in the power of grasping and applying general principles, and in appreciating Causation. In learning matters of detail, isolated facts, and events, they are generally superior to the boys. Thus, when the children are examined upon what they have just read, the girls usually answer more readily than the boys, so long as the answers are confined to the literal contents of the book, and answers in the words of the book are accepted; but, when they are required to supply original illustrations, or apply what they have been reading to new circumstances suggested by the teacher, the boys exhibit a decided superiority. By keeping these differences in view, and alternating the questions between the boys and the girls, they are made continually to assist each other.

By comparing the conduct of boys and girls thus in school together, the moral superiority of the female character is strikingly evident. Their gentleness and docility, their kindness to each other, and conscientious faithfulness in the performance of every duty, added to the depth and earnestness of their Religious emotions, render the moral government of the girls a task that is scarcely felt, and their presence is a powerful aid in the moral government of the boys. The petty jealousies, slanderings, and other abuses chiefly originating in misdirected Love of Approbation, to which girls are most liable when restricted to the society of each other, are seldom manifested in the presence of boys; for their boisterous ridicule is as effective in suppressing these follies, as the gentle sensitiveness of the girls is in appealing to the higher feelings of the boys, and inducing them to practise moral self-restraint. When any symptoms of these jealousies manifest themselves, the teacher finds it quite sufficient to say that he has observed something of the kind, without mentioning the name, or in any way indicating the offender; explaining, at the same time, phrenologically, the origin of the folly, and that it is especially a girl's failing. The curiosity of the boys is at once excited, and the girls, in their eagerness to avoid an exposure of their weakness, speedily adjust their differences and become better friends than ever. Affectation is treated in the same manner, the principal difficulty here being, not in finding a moral remedy strong enough, but in moderating the force of its operation.[2]

The moral training is not confined to the mere teaching of the principles of morality, but every effort is made to exercise and develope the Moral Powers of the children, by maintaining them in active operation, in all the proceedings of the school. We desire so to regulate the conduct of the children, that what they are taught in the lessons may, at once and habitually, be carried out in their intercourse with each other. Moral delinquences are tried *by a jury of the children*, the teacher acting as judge. These trials are so conducted as to form practical moral lessons on circumstances which the children cannot fail to understand and appreciate, and aid in creating a sound public opinion throughout the school,—the operation of which is not confined to the occasion on which a verdict is pronounced. The offender, who thus receives condemnation from his own school-fellows, feels both its force and justice far more deeply than if the teacher alone pronounced it; and the jury themselves, in asserting the supremacy of justice, are exercising their own Moral Powers, and thus fore-arming themselves against the liability to commit similar transgressions.

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[1] From Fourth Report (1853), p. 6.

[2] From Fourth Report, p. 19.

The teachers have always endeavoured to give a moral tone to the whole proceedings of the school, by maintaining a scrupulous impartiality in their treatment of the children, by explaining to them the moral grounds upon which the school discipline is founded, and freely permitting *their own* conduct to be questioned—making the government of the school, in fact, as constitutional as possible, and altogether based upon reason and the Moral Sentiments; always avoiding the position of irresponsible despotism, which is assumed by some schoolmasters, and viewed by many parents, as essential to school discipline.

The intellect of the children has been awakened to so great an extent as to have effected, in many cases, a visible change in their manner and appearance—an earnest curiosity and a love of knowledge have arisen, and become a general characteristic of their minds. They evidently begin to feel that they are living and moving in a world which has been created by Divine power, and adapted by Divine wisdom to the nature of man. They perceive the direct influence on their well-being of the knowledge imparted to them; while they have also learned that they live in a scene of wonders, where fresh beauties and harmonies are ever opening to those who look around with attention and intelligence. They observe, think, and read spontaneously; in many cases, with such earnestness and activity, as to require considerable vigilance, on the part of the teachers, to prevent over-exercise of the brain.[1]

Moral Training has always been maintained as the paramount object of the school. As already mentioned, the children are taught the laws of their own constitution—physical, intellectual, and moral—as deduced from the structure and relations of their bodily and mental organs, and from observed mental phenomena. It is shown to them, that these laws are not mere human inventions, but the positive institutions of the Creator; that the whole framework of external nature is built up in accordance with them; that not one can be violated by us, without deranging the harmony of our own functions and relations to the world around us, and thereby necessarily producing immediate or remote pain and misery to ourselves and those we influence. This principle is studiously kept in view in all the lessons on the Sciences. The children are shown the evidences of design and unity existing in the structure of the universe; that not a particle of matter, however insignificant, can change its place, but in accordance with the laws impressed upon it by its Creator; and thus they learn that every truth which Science teaches is a revelation of God's will, which should be known by man, and serve to guide him in performing his part in the general scheme of creation.

In the lessons on the Physical Sciences, they are taught the laws by which the Creative intelligence is governing and sustaining the physical universe; in the Physiological lessons, they learn the conditions upon which He permits organized beings to enjoy life and health; and in the Phrenological lessons, although these cannot teach them what is the essential nature of Thought and Sentiment, they find an exposition of the organic conditions upon which the manifestations of the Intellectual and Affective faculties depend,—they learn that the moral as well as the physical world has been created with a fixed and definite constitution—the laws of which we may study, and thereby learn much of the will of the Creator concerning our moral conduct. These laws, as far as the progress of Science has as yet developed them, are taught by examining the elementary faculties, the action of which produces all our *impulses, emotions, and ideas*; how these powers may be abused and misdirected, and thus be in discord with each other and the world without, which discord is vice and leads to misery; and how they may be rightly used and well directed, so as to be in harmony with each other and all things, which harmony is virtue and tends to happiness.

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[1] From First Report (1850), p. 10.

The introduction of Phrenology, because of the prejudices still cherished against it, was considered by many as an experiment of questionable prudence, but experience has proved its wisdom and great utility. Without instructing children in their bodily and mental constitutions, it is impossible to convey to them clear, useful, and practical notions of their own relations to the other objects and beings of creation, and to the Creator, and to invest instruction in the works of God with that Religious character which truly belongs to it. By enabling the children to understand their own mental faculties and bodily functions, and the objects of the Creator in bestowing these upon them, their Religious Feelings are brought, in harmony with the Intellect, to bear upon all things, and to exert their elevating, purifying, guiding, and restraining influence upon daily thought and action.

The children take a deep interest in this instruction; so much so, that if their attention be flagging over an object, they are roused and excited to fresh life when its designs and uses, as instituted by the Creator, are unfolded. It is no longer a subject of pure intellectual contemplation, but becomes a key-note which rouses their Sentiments of Wonder and Veneration; and these, again, communicate new intensity and depth to their intellectual perceptions.[1]

II. THE INTELLECTUAL EDUCATION OF THE SCHOOL.

The main object kept in view in the teaching is, to fix in the minds of the children the great principles of each branch of Science, and to give them such a key to the whole subject, and the mode of investigating it, as will enable them to prosecute more fully any branch of study that their future occupation or inclination may lead them to undertake. Every effort is made to train their minds to habits of philosophical investigation, and to carry them practically out of the very common error, that Science is a something confined within the walls of universities, behind lecture tables, and amongst stoppered bottles and philosophical apparatus; and to convince them that what we call Science is simply a systematic knowledge of the objects which exist, and the agencies which are ever acting around and upon us, and which, in fact, influence us at every moment of our lives, and regulate the most ordinary affairs of everyday life. They are taught to observe the fact that the laws which Science teaches are everywhere and always in operation; that no being or object can exist for a moment without being subject to them; that our happiness or misery depends to a great degree upon the circumstance, whether we place ourselves in harmony or at discord with them; that every object or action we can contemplate affords us an illustration of some of the principles of Science; that all nature is a manifestation, and, by its relation to our faculties, a revelation of the power and will of our Creator; and that, therefore, every duty of life, great or small, has in itself an inherent dignity and importance—is, in fact, a Religious duty, and should be performed, not merely for the sake of its direct advantages, but out of reverence to Him who instituted it.[1]

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[1] From First Report, p. 9.

Among other means which have been adopted for awakening the intelligence of the children, one may be mentioned which was tried by the teacher as an experiment, and has proved successful. The children were directed to look about them wherever they went, to examine carefully the things and books they met with, and to try to find something they could not understand, and which might puzzle the teacher; to write a question concerning it, with their name appended to it, and hand it to the teacher, who, if he could, would answer it and explain the subject to the whole class. This was tried shortly after the school opened, but it was not until the month of May following that any of the children were induced to commence. When once begun, however, the questions became subjects of much excitement, and poured in very abundantly. Lessons have since been regularly given upon them, and they are found to interest the children more than anything else, and afford a powerful means of exercising their Observing and Reflective faculties; besides suggesting to the teacher a multitude of useful subjects and common applications of great principles, about which the children's minds are already active and their curiosity roused, and informing him of much that it is desirable he should know concerning their ideas and wishes, and the subjects which most occupy their minds, and those which fail to do so.[2]

This readiness of apprehension was expected, from the obvious consideration that the same Divine wisdom which instituted the mental faculties also constituted the material world, and that an adaptation of the one to the other was therefore presumable. All natural objects present themselves first to the senses and Perceptive faculties as mere existing things, possessing certain qualities; they are next viewed as active agents, and the phenomena which they exhibit are presented to Eventuality, and the other faculties whose organs form the second range of the Perceptive group. These actions, when regarded in their relations and results, are the objects of the Reflective faculties. The practical utility of the arrangements of Nature bearing directly on our comforts and interests, arouses to harmonious and beneficial activity the Social and Self-preservative feelings; while the wisdom, benevolence, and beauty, which beam from every work of God, appeal powerfully to the Moral, Religious, and Poetic Sentiments. Thus, the objects of Science, when presented in their natural order to the mind, take hold of all its faculties, and cling to it with a force and permanency proportionate to the number and vigour of the faculties addressed.

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[1] From Second Report, p. 8.

[2] From First Report, p. 8.

Phrenological investigators have shown that Attention and Memory are not separate independent faculties, but are modes of action common to each of the Intellectual powers, and bear a relation to their general vigour. Hence the interest felt in any particular subject, and the power of retaining knowledge of it, depend upon the number of combined faculties to which it appeals, as well as upon the strength of the faculties considered individually.

This principle is the key to our power of imparting knowledge. The greater the number of faculties the teacher is capable of rousing into energetic activity, and bringing to bear upon the subject, the more keen will be the attention of the children, and the more permanent the impressions made upon them. If the teacher be an intelligent Phrenologist, well acquainted with the functions of the elementary faculties, and the objects to which they are related, he knows at once which mental powers he is appealing to, and it is easy, and soon becomes habitual to him, to present scientific subjects to all the faculties, in the order in which they naturally and most harmoniously act. He thus not only imparts a greater amount of knowledge, but affords to the mind the best possible discipline; for, it must be remembered that, while the most powerful character is that in which the faculties act with the greatest energy, the most perfect is that in which their action is combined in the truest harmony.

In the care of children who, for a long time, have been accustomed to learn lessons by rote, it is at first difficult to direct their attention continuously and systematically to precise objects. This seems to arise from the fact that, in learning lessons by rote, two or three of the Perceptive faculties, with Concentrativeness, are all that are exercised, and only these are trained to act in concert, while the others are left in a state of comparative torpor. Some time is required to bring the brain into that state of general uniform activity which is essential to the operation of the mental faculties in logical succession and harmonious combination. Upon the existence of this condition seems mainly to depend the possession of the philosophical intellect: and, when once it is fairly induced, philosophical subjects, instead of appearing dry, heavy, and obscure, are found to be the most interesting and exciting that can be presented to the mind; the whole character is awakened and vivified, and the change is decidedly visible in the countenances and general bearing of the children This change is a matter of continual remark by the more frequent visitors to the school, who have observed that the coarseness and vulgarity of aspect of some of the children, and the heaviness and dulness of others, are rapidly changing to an expression of comparative refinement and intelligence; and this has led many strangers to suppose that they belong to a higher class in society than is really the case.[1]

With the exception of the arithmetical tables, no lessons are set to the children to learn by rote. Wherever references or theories are involved, they are submitted to severe examination, the teacher suggesting difficulties and apparent objections, and requiring the pupils to do the same. In general, his object is to lead rather than carry them through a subject, by supplying, or, if possible, drawing from themselves, such suggestions and facts as may direct their minds to investigate and find their own conclusions, rather than to remain mere passive and submissive recipients of the statements of the teacher. By these means the Intellectual faculties are vigorously exercised and developed, and the subjects taught are firmly fixed in the mind. It is hoped that the intellectual training thus commenced in the school will not terminate there, but that the children will acquire habits of investigation, and an independence and energy of intellect, which will induce them to continue, through life, the pursuit of knowledge as their most valued recreation.

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[1] From Second Report, p. 5.

Object lessons are given daily to the younger children—generally by Miss Carmichael, sometimes by Mr Williams, and occasionally by one or another of the ablest monitors. These lessons are conducted so as to afford some general and rudimentary ideas on various branches of knowledge, and on the meaning and application of the ordinary words and scientific terms which the sensible properties of the objects illustrate, in order to prepare the children for those systematic courses of instruction in the Sciences which constitute the chief business of the advanced classes.

By presenting to the youngest children a piece of metal, of rock, of glass, of wood, &c., and examining experimentally its most obvious properties—such as colour, texture, hardness, cohesion, odour, specific gravity, fusibility, &c., &c., and naming them by their proper Scientific designations, which, thus taught, are more easily understood and remembered than less definite and accurate terms—the pupils are prepared for the advanced classes, where the higher phenomena of nature, and the mechanical and chemical laws which regulate them, are studied.

In Geography, all that is visible on the map—the distribution of land and water, and of mountains, valleys, and plains; the courses of rivers, and the relative situations of the various countries and their chief cities; also the climate, plants, animals, and the most prominent customs and physical peculiarities of the people of different nations—may be presented to the minds of children of from five or six to ten years of age, and rendered intensely interesting to them: and, whatever interests a child, is understood and remembered. When they have passed through this preliminary training, they are ready for the advanced classes, in which they are instructed in the relations of our planet to the heavenly bodies, and the forces which determine its movements among them; the structure of the earth's crust, and the changes it has passed through and is undergoing; the constitution of the atmosphere and of the waters of the earth—their mutual relations and their influences on the solid foundations upon which they rest; the phenomena and laws of climate and Meteorology; and the moral and intellectual characteristics, the social and political institutions, and general history of the inhabitants of different countries.

The object-lessons are also made introductory to Physiological and Moral Science. A bone, a skull, the whole skeleton, an anatomical diagram or preparation, is sometimes made the subject of an object-lesson to the younger children; and thus they become acquainted with the general structure, and some of the functions of their own bodies, preparatory to entering upon a regular course of Physiology.

Rudimentary ideas of their own Mental Faculties are afforded, by leading them to inquire how they know that an object is brown, or hard, or odorous, &c.; and thus the organs and functions of the senses and Perceptive faculties are made, to a certain extent, familiar to them, and the subject of Mental Philosophy, and the relations of their faculties to the external world, is opened, to be afterwards more fully unfolded in the advanced classes for Phrenology.

The comparison of a natural with an artificial object—a piece of flint, for example, with a piece of glass, or a tree with a table—serves as the basis of elementary instruction on the distinctions between raw materials and manufactured articles—on wealth and its production by labour—on the capital required for its production—on wages, profits, division of labour, interchange, commerce, &c.

Having, in this manner, conveyed to the minds of the children some simple, precise, and accurate notions of the forms and qualities of physical objects, the next aim of the promoters and teachers of the school is to superadd a systematic knowledge of the structure and functions of the human body, and of the faculties of the mind. Physiology, illustrated by a human skeleton, by casts of the muscular system, and by diagrams representing the blood-vessels, the digestive and respiratory organs, and also the brain, spinal marrow, and nerves, is used as the basis of explanations of the structure, modes of action, laws of health, and uses and abuses of the bodily and mental organs. Abstract terms and disquisitions are, as much as possible, avoided, and objects, facts, relations, and mental states, falling within the observation and consciousness of children, and elucidated by numerous and familiar illustrations, are chiefly relied on.

The success of the instruction in these departments exceeds the most sanguine expectations of the promoters of the school, and shows that God, who ordained the human faculties, adapted the remainder of creation to them, with a wisdom and goodness which promise results of unspeakable importance, whenever adequate instruction in natural truth shall be generally and successfully conveyed to the opening faculties of the young.

Thus, grounded in accurate ideas concerning the simpler elements and laws of the Physical and Moral worlds, the pupils are prepared for lessons on Social Economy, in which the natural laws which govern the production of wealth, the manner in which it has been and may be distributed, and the foundations of differences of rank, of civil laws and government, and of the general duties and arrangements of social life, are taught.[1]

Particular care is taken to secure the intelligent co-operation of the children with the teachers, in forwarding their own education, by explaining to them why they are at school, and the advantages which steady application to their school duties will confer upon them in adult life.

These explanations are not confined to mere dogmatic statements,—that education is a good thing; that well-educated people rise, and that the uneducated sink, in the social scale—but abundant illustrations of these facts are supplied; and, what is of still more importance, the necessary influence of knowledge and training in determining human conduct, and the natural consequences of conduct, are philosophically elucidated; and the conditions of success and failure in life are shown, not to be the results of political arrangements, or of human laws of any kind whatever, but to depend upon the natural laws of the human organism, and the relations which it bears to the objects and active forces of the external world.

Thus, in the Physiological lessons, the children are shown how and why it is that our physical health and happiness depend upon our complying with the fixed natural conditions of health. The Physiology of the brain teaches them the conditions upon which mental vigour depends, and demonstrates that vice and misery are, in their origin, identical, both being the necessary results of the discordant and ill-regulated action of the Animal, Moral, and Intellectual powers; while virtue and happiness result from their well-directed and harmonious action. They are also taught, not empirically but inductively, that every organ, whether of the Physical, Intellectual, or Moral powers, requires regular and systematic exercise in order to fit it for steady and vigorous action; that, during early youth, while all the organs are rapidly growing, this exercise is the most urgently required and most effective; and thus they learn the natural necessity for school and domestic *training*. In like manner, the lessons on the Physical Sciences, Natural History, and Social Economy, show them the use of the school *teaching*, by demonstrating how the properties of natural objects, the active, physical, chemical, and vital forces of the organic and inorganic world, may be made to promote human well-being, when we intelligently avail ourselves of them, or may produce misery and destruction if we ignorantly or wilfully misuse them; and finally, how, by the intelligent and moral co-operation of human beings with each other, all the advantages which individual intelligence and good conduct can afford may be increased a thousand-fold.

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[1] From First Report, p. 5.

This instruction is readily understood by the children, and received with avidity, as indicated by the earnestness with which they question the teachers upon the use of what they are being taught, whenever such explanation has been omitted.

Not only is the usefulness of every branch of knowledge which is taught explained to the children, but also the reasons for adopting any particular order or method of teaching. As already stated in the previous reports, the children are also taught the reasons for the discipline to which they are subjected. Thus, when a child, by playfulness or otherwise, disturbs the business of a class, he is turned out of it, and, for the time, deprived of the advantages of the teaching: and he is told that this is done in order that those who are willing and anxious to learn may not be disturbed by those who are so foolish as to be otherwise; and that, when he leaves school, he will be treated in the same manner, viz., he will be turned out of any situation, and lose all the advantages that may be derivable from it, if he neglects the duties which he is required to perform in that situation; and that boys and girls, who have not sufficient self-control to remain steadily at work in their classes, unless they make great efforts and acquire that power before leaving school, will, on becoming men and women, be outcasts in the world, just as they were in school; that those who cannot be trusted to behave well, and to try to improve themselves in school, but require continual watching and reproof from their teachers, are not likely to become fitted for responsible and honourable employments, but will be driven to inferior drudgery, as servants to those who have sufficient moral energy to control themselves, and who, having proved that they can do that, are trusted to control others: that, in like manner, those who, by their superior trustworthiness and abilities, rise to become monitors at school, are likely, in after life, to take superior positions, to become foremen, directors, masters, &c.; and that, in acting as monitors, they are being trained in the act of governing justly and impartially, without self-conceit or petty tyranny, which all must learn to do who aspire to direct others.[1]

The isolation of the school, which is the only one of the kind in Edinburgh, has hitherto placed the pupil-teachers at a disadvantage, by depriving them of the advantages of communication, and the stimulus of competition with pupil-teachers of other schools.

The smallness of their number (three) has rendered it difficult to adopt the systematic modes of instruction for pupil-teachers, which may be carried out in a Normal School, where special organisation for this purpose exists. This defect having been felt, an effort has been made to obviate it, by instituting weekly critical lessons. These lessons are given, either by the pupil-teachers, or such of the monitors as volunteer, to the junior pupils, in presence of the rest,—the teacher acting as chairman. At the end of the lesson, the children (including the elder pupils, who attend as spectators), the monitors, pupil-teachers, and those to whom the lesson has been given, are called upon to make such criticisms as they think fit, on the matter, the style, the arrangement, the grammar, pronunciation, &c., of the lesson they have heard. They are carefully informed that the object of such criticisms is mental improvement, more especially the improvement of the pupil who has given the lesson, and that, therefore, they must be made in a kindly spirit, and not for the mere gratification of Self-Esteeem and Love of Approbation of the critic; and that they should be received thankfully by the giver of the lesson, as friendly contributions to his improvement, and never as attacks upon his dignity.

When all who are disposed have made their remarks, the giver of the lesson is called upon to reply, that is, to accede to the justice of the criticisms which he thinks were correct, and to defend his position, when he regards the criticisms as unsound, or founded upon a misunderstanding of his design. After this, the teacher sums up the whole, and makes such additional remarks and suggestions as appear to him to be necessary.

These lessons were commenced in January of the present year, and were at first given weekly; but their influence has been found so beneficial, and the volunteers so numerous, that they have been extended to twice a-week. The teacher occasionally gives a lesson, subject to the same criticism as the rest.

The acuteness shown by the children in these criticisms is very remarkable; an ungrammatical expression, an error in the statement of facts, or in pronunciation, seldom escapes comment. They are particularly keen in convicting the teacher of Cockneyisms.[2] If he adds or omits an aspirate at the beginning or an *r* at the end of a word, a number of slate-pencils are immediately at work making note of the fact, and, at the end of the lesson, the error is freely stated and the correction made.

At first, the vigour of these criticisms produced considerable mortification to the pupil-teachers and monitors that had given the lesson. One of the monitors, a very sensitive boy, who had prepared his lesson with great care, and evidently expected that he had made it proof against attack, was so much wounded upon finding error after error pointed out, that, after struggling with himself for some time, he at last burst into tears, although the criticisms were all made in a kindly spirit.

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[1] From Fourth Report, p. 4.

[2] Mr Williams had come from London to take charge of the school.

Since the teacher has submitted himself to the same ordeal, this sensitiveness has been diminished, and the children are evidently learning to bear patiently the questioning of their opinions, and the free discussion of their own merits,—a lesson that every one requires to learn, in order to pass through life without continual quarrelling or despondency. Nor is it likely that such lessons will tend to engender a mischievous indifference; for their effect is to direct the attention of the pupil to his own defects, with a view to removing them, and to prevent his Self-Love from leading him either to form an unjustifiable estimate of his own merits, or to produce that diffidence and despondency which often impedes the progress of sensitive youths, whose Self-Esteem and Love of Approbation are naturally active, but who have not been trained to bear the rebuffs and disappointments they must encounter in the active contests of life.

By thus submitting teachers and pupils to the same tribunal of free discussion, a practical demonstration of the natural supremacy of truth and justice is afforded, the final appeal being made to the authority of these alone. The position of a teacher naturally tends to induce a disposition to dogmatise, the counteraction of which is of the utmost importance. This tendency shows itself particularly in pupil-teachers, who, just at the age when Self-Esteem and Love of Approbation are most actively manifested, are placed in a position of authority over children a little younger than themselves, and thus exposed to great danger of becoming pedantic, conceited, and despotic. By these periodical criticisms from their own pupils, they are made conscious of their imperfections, and are continually reminded, that neither their pride nor their position can give them any real superiority over their pupils, but that their authority must be based on superior attainments and moral energy alone. The adult teachers are also benefited in like manner by this sort of training; for it must never be forgotten that the schoolmaster, as well as the pupils, is being daily educated by the circumstances in which he is placed.

Many may at first suppose that, by allowing such liberty to the children, the authority of the teachers will become subverted or diminished; for it is often laid down as a sort of schoolmaster's axiom, that the teacher must always conceal his ignorance and natural defects from his pupils; and it is a common practice, with even good teachers, to evade questions which they cannot answer, and have recourse to many other artifices, in order to lead the pupils to form an exaggerated estimate of their attainments. The promoters and teachers of this school believe this to be a serious and demoralising error; and the teacher has, from the commencement, scrupulously acted upon the opposite principle, by candidly confessing his ignorance whenever a question is put to him that he is unable to answer; or, whenever he ventures an explanation which is at all doubtful, the doubt is distinctly and carefully stated, and the explanation offered, not as a sufficient one, but as the best he is able to give. Experience has shown that, instead of diminishing the respect of the children, this course produces the opposite effect. Children can understand Natural Language more readily than artificial language; they have great skill in interpreting the tones of the voice, expression of the countenance, and general manner of persons with whom they are accustomed to communicate; they are influenced by these much more than by the *words* which are used, and are more likely to detect evasions, or any effort at concealment of ignorance, than even adults. All such devices, therefore, are pretty sure to be self-defeating, and to lead to a general tendency to distrust the teacher. But, when he is in the habit of candidly avowing his ignorance, or any other defect or disadvantage, and acknowledges thankfully any information which the children are able to give him,[1] they instinctively respect his truthfulness, and place the utmost reliance on whatever he does profess to know or to do. The importance of this, as regards the influence of example, is too obvious to need any comment.[2]

III. ON THE TEACHING OF SCIENCE IN THE SCHOOL.

One of the leading characteristics of this school is the prominence which is given to the teaching of Science to children of both sexes. In the last Report, the usefulness of this as a means of general training, that is, of calling into the most healthy exercise all the Intellectual faculties, and combining their action harmoniously with the Moral Sentiments and Affective faculties generally, was pointed out. Many persons are still of opinion that this kind of instruction is not required in schools for the working classes; a little reflection, however, must show that it is, to them especially, a matter of great practical importance.

In the first place, no method of strengthening the mental faculties, and rendering them vigorous and alert, will be found so efficient as teaching the objects and agencies of nature. It not only furnishes the children with knowledge, but trains them to use it, as the grand element of their future well-being in social life. Secondly, the artisan and the agriculturist, in their daily avocations, come into direct contact with the objects of external nature; their business is to take advantage of the qualities, relations, and inherent active powers of these objects, and thereby extract from them, or convert them into, useful commodities. Science is simply a systematic knowledge of these qualities, relations, and powers. He who is best acquainted with these, and has the power to apply his knowledge in the required direction, is the best workman.

Previously to the time of Bacon, while what was called Science consisted almost wholly of mere speculative pedantry, the unlettered artisan, by practically dealing with nature, possessed more of real Scientific knowledge than the learned men of his day. To have taught him their verbose systems of Philosophy would have been wasting his time, and diverting him from more useful and really higher avocations. From this has probably originated the idea that Science is beyond the reach and requirements of artisans and practical men, and that its study should be confined to professional and merely learned individuals. At the present day, however, no rational foundation for this opinion exists. Philosophers now follow the same inductive method of investigation which practical men in all ages have done; but, by more united, skilful, and systematic efforts, they have, in many respects, left the working man far behind in knowledge of the available powers of nature.

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[1] It often happens, in the course of a lesson, that the teacher is at a loss for an illustration, which some of the children will be able to supply if he asks them, especially if the class be large. These illustrations are often the best that can be afforded, as they are drawn from facts with which the children are most familiar. The teacher has derived much valuable aid in this manner from the children, especially in the lessons on Social Economy, when they have given him information on domestic, workshop, commercial, and other usages, which are common in Scotland, but differ from those of London. When he is describing the processes of Arts and Manufactures, the children are continually contributing some additional information on the practical details connected with their father's trade, or derived from what they have seen in workshops in the neighbourhood of their residence. It is true that such information may be gained from the pupils without any confession of ignorance or dependence on the part of the teacher, by putting the questions in the same manner as other questions which are intended to draw forth answers, which he is prepared to supply if the children cannot; but, for the reasons above stated, this is not done.—(Mr Williams).

[2] From Fourth Report (1853), p. 8.

Many persons, who admit the importance of teaching Physical Science to boys, are inclined to exclude it wholly or partially from the education of girls, regarding it as unsuitable to the sex, and disposing to pedantry. This idea can arise only from a misapprehension of what is here meant by Science, and is taught as such in this school. It certainly is quite possible to cram the mind of a girl with a large number of mere technicalities, and, by presenting to her, as the chief motive to exertion in such studies, the desire to become more learned than the rest of her sex, and to eclipse them by displaying her condition,—to lead her to connect this knowledge so intimately with her Love of Approbation and Self-Esteem, as to render her so-called Scientific attainments useless to herself, and a nuisance to those who are compelled to listen to her displays of them.

But, when the realities of Science are taught in a proper spirit, the effect will be diametrically opposite to this. When children are made to understand that they are living in a world where every object in existence is a never-resting agent, exerting some influence on everything arrived at, and being, in turn, perpetually acted upon by everything else; that they themselves, as sentient beings, are suffering happiness or misery, according as they place themselves in harmony or at discord with these never-ceasing efforts of causation; when they are further taught that their Creator has beneficially endowed them with faculties, specially adapted for learning the properties of these objects, their relations and operations on each other and on themselves, and that he has attached the highest and purest gratification to such exercise of these faculties; when they understand this, and that a systematic knowledge of these things constitutes Science, Science ceases to be pedantry; it is felt to be a necessity, and the study of it a high and holy duty.[1]

The question will perhaps be asked, Can sufficient Scientific instruction be imparted to children at school to enable them to become Scientific operators instead of mere mechanics, and thus to adapt themselves to the shifting exigencies of their future lot? With regard to children in general, this question may be answered in the affirmative. There will, of course, be some with naturally inferior capacities, who cannot be qualified to perform other than the easier mechanical operations. Let us not, however, be misunderstood. It is not pretended that the extent of Scientific information which can be imparted in a school for the children of the working-classes (who leave it so early) can be sufficient to enable them at once to understand and apply every improvement in manufactures depending on Science; but this much may be accomplished: They may be made acquainted, as they are at this school, with the great principles of Science, and thereby rendered capable of seeking in the proper places for the special information required, and also to understand the technical language in which it is expressed. The teacher of this school may quote his own experience in illustration of this remark. At the time when electro-plating and gilding were first introduced, he was in London engaged in Electro-metallurgy, and several platers and water-gilders came to him for materials and instruction in the new process. Some of these were members of Mechanics' Institutions, and had studied a little of general Science, and Chemistry in particular. These men were able to read and understand the treatises written on the subject; they studied them carefully, and having grasped the principles they applied them with comparative ease, failing, of course, sometimes (as all men are liable to do who have not had practical experience in any art); but then every failure was instruction, for they were able to discern the cause of failure, and thereby to overcome the difficulty and avoid its recurrence. Others of them were respectable skilful mechanics of average natural intelligence, but quite ignorant of Science and the technical terms used in expounding it. They were besides wholly untrained to the task of tracing scientifically the operations of the various agents exhibited in natural phenomena. They had purchased manuals on Electro-metallurgy, and had endeavoured to follow out mechanically the directions given in them, despairing altogether of understanding the Scientific principles upon which the art depended. The consequence was that sometimes they succeeded, sometimes they failed; but they scarcely ever knew *why* they succeeded or *why* they failed, and their experience therefore was of little value. After wasting much time and material, most of them threw up the new process in despair, and returned to the old method, struggling on in a hopeless effort to compete with those who had the advantage over them in being able to wield it. Some of them were compelled to take a subordinate place, doing the cleaning, "scratching," and burnishing at the trade, while their more intelligent associates directed the electrical operations.

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[1] From Third Report, p. 5.

Some persons are apt to undervalue the teaching of the general outlines of Science, and to call it a mere useless smattering. This opinion is frequently entertained by such as have studied very minutely the more recondite details of some particular branch of Science, with the view of making original investigations and discoveries. A little reflection, however, will show that what is thus frequently regarded by the learned as the profundities of Science is in reality only the smatterings; while that which is apt to be treated lightly, as mere smattering, is truly the profound part of our knowledge.[1]

It is true that these subjects and technicalities may be, and frequently are, presented in such a mannner as to be extremely difficult for children to understand. If a teacher describes and demonstrates, however clearly and logically, and goes on as an ordinary lecturer would do, without at every step questioning and cross-questioning the children, to be sure that they understand him, he will probably lead them into a mass of confusion. He must not assume that, because he speaks quite grammatically, and his style is most accurate, clear, and simple, he is therefore understood. He must obtain demonstrative proof that they have understood him, by making *them* tell him what *he* has already told them; he must not be satisfied if they repeat exactly what he said, for then they may be repeating mere words without expressing ideas. They must describe, in their own way, what they have learned. Many words which are among the most familiar to adults, and to them express clear ideas, are mere words in the ears of children; and if we consider the short time that the child en engaged in the practice of using words at all, it will appear doubtful er even the words which the children best understand, are as strongly ted in their minds with the ideas they represent, as they become in ife. In connection with this remark, a very important principle, which to be but little, if at all, understood and acknowledged in its relation cation, may here be stated.

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[1] From Third Report, p. 15.

mplex idea may easily be imparted by words alone, to any one who tands the meanings of the terms which express the elementary ideas of it is made up. Not so with simple elementary ideas; *these must exist in d before the words which express them can possibly be understood.*

ds may *suggest* such ideas when already existing in the mind, but directly impart them in the first instance. In teaching Science to children, such simple or nearly simple ideas have frequently to be ed; and hence the necessity of objects, pictures, experiments, and ces to familiar facts.[1]

he collective lessons for simultaneous instruction of large numbers, the g is made subservient to the systematic courses of instruction on the and Physical Sciences, Natural History, Geography, &c. The teacher ads aloud a sentence, and then all the class read it aloud together— g time by a slight exaggeration of the pauses. In these lessons, elocution glish pronunciation are carefully attended to, and every effort is made ble the children to grasp fully the subject of the lesson, by supplying with additional facts and illustrations of a familiar, and, if possible, aracter; and by leading them to supply illustrations of thir own, and l applications of the knowledge they are acquiring. Spelling and ogy are connected incidentally with these lessons. Whenever the subject , and the means of the school will afford, objects and diagrams are ed; and the teacher has found that the rapidity, accuracy, and stability progress of the pupils in any branch of knowledge, may be almost ed by the number of such illustrations that has been presented to

value of the course of Physiological teaching becomes greatly increased, t includes the Physiology of the Brain, as is the case in this school. ildren are shown that the conditions of Mental vigour are as certain and ble as those of Physical health. Thus, when the heart, lungs, stomach, &c., all act harmoniously together, each doing its share in the work of tem, by performing efficiently the function assigned to it, the body is th: but when any organ is deranged, weakened, or inflamed, and s its function irregularly, deficiently, or in excess, feebleness or is the result. So with the brain; the children learn that every part of apted to its particular objects, as directly and perfectly as the stomach ood, the lungs to air, the muscles to gravitation and other physical ces; that Moral and Intellectual education is the presenting to the s manifested by the cerebral organs their proper objects, and training o act with vigour and in harmony in relation to them; that intellectual moral virtue, and general happiness result from the proper direction rmonious action of the faculties, and that imbecility, vice, and misery result of the opposite states. In studying the structure of the skeleton,

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[1] From Third Report, p. 9. [2] From Fifth Report, p. 12.

they see simple and unmistakeable evidence
they proceeded onwards to study the org
respiration, &c., they learn how beautifully
to the mechanical and chemical properties of
related, and upon which they act. In like m
the intimate nature of its actions is too subtl
sion—although the nature of mind itself is
dependence, in this life, of faculties upon
demonstrated, and the sphere of action and o
and when this is done, the same wise and
still more admirable from the greater elev
The fact that it is impossible to infringe
suffering, is thus placed upon a scientific basi
be a misuse of our faculties, by directing them
them with undue intensity ; and to be analo
supplying it with improper food, or overloadi
cerebral organs and their relations to each
thus understood, the sin and folly of the fo
their evil consequences are seen to be as inevi

This exposition of the nature, uses, and
enables the teacher to carry Moral analysis of
is possible when these are unknown ; and no
can conceive how imperfectly Moral and Relig
Scotch children, when conveyed in the En
Even after this class had made some progress
are from 13 to 14 years of age, not one of the
"immoral" or "immortality" meant. Th
heard in church that the Gospel had brought
Twenty voices answered, "Yes." "What,
No one could tell. And it was not want of
ideas that prevented them from answering.
any sentence in Scotch in which they could
they could not. To test them further, they
were immortal, and most of them answered
apparent dulness is found in the fact, that En
a foreign language. After explaining to the
approved of by enlightened Intellect, and
Veneration, and Conscientiousness (the office
learned), and that "immoral" means an act
they shouted out "moral" means "right,"
these being their familiar words for "moral"
told that the desire for "immortality" arises
Life, which also had been explained to them,
for ever."

The exposition of the nature, objects, and
and their connection with different parts of
comprehend the fundamental cause of the dif
which they meet with among themselves ;

From First Report

education, to exercise, invigorate, and instruct their faculties, so that they may act in the directions which will conduce most effectually to their well-being.

Their attention is particularly called to the great fact that this world is a theatre of active causes or forces, physical, animal, and moral, which are constantly determining the well or ill-being of every individual, and that the object of the school is to instruct them in these. This teaching expounds the basis of Social Economy, and also affords a basis for practical precepts, and for addresses to the feelings and understandings of the pupils when they do wrong, which reach their inward consciousness and subdue them to virtue more effectually than any other method which has been tried in this school. Visitors who have heard these exercises in Moral and Intellectual analysis have frequently expressed their surprise how children could execute them; but there is no mystery in the process. Every moral force is taught in connection with its organ. It is explained to them that *cæteris paribus* (words which are thoroughly expounded) each is weak when its organ is small, and strong when it is large, and thus the organs serve as a visible and tangible basis on which they build easy explanations of the uses, spheres of activity, abuses, and relations of the Mental powers.[1]

It must not, however, be inferred that in thus presenting these subjects in relation to their practical applications, the inherent interest of knowledge for its own sake is lost sight of. It is found that little effort is required, in the form of rhetorical commentary, to lead children to appreciate the admirable properties and beautiful harmonies of nature; for, if their attention is fairly directed to the facts and relations of Science and Natural History, and these are made clear and intelligible to them, they appeal spontaneously not only to the Intellect, but to the easily roused Wonder and Poetic emotions of the child, and quite as effectually as the most popular nursery fiction. The steam-engine, moved by a natural force which the intellect of man has summoned to his use, is stronger than the biggest giant that fabled heroes ever vanquished. The modern chemist, by availing himself of the simple properties of the earth's materials, can effect changes as wonderful as those which the magician, aided by his spells and familiar spirits, is said to have produced. The genii conjured up by means of Aladdin's lamp could not perform half the marvels actually achieved by electricity; which, in one of its forms, can be made to appear by rubbing a common piece of glass. Even fairyland, the purest and most elegant of all the creations of imaginative poetry, is eclipsed by the miniature world of beautiful beings the microscope unveils; and it would be profanity to compare even the grandest of romantic conceptions with the overwhelming vastness of the infinite maze of worlds revealed to us by the telescope.

The importance of educating the Poetic faculties of children by directing them to natural objects has been too much overlooked. The emotional desires for novelty, grandeur, beauty, and perfection are among the most active of the child's faculties. Fiction, frequently romantic and exaggerated, is the medium through which the objects of these aspirations are most commonly presented to the child; and, when we *commence* by such means to educate the faculties on which they depend, the faculties are misdirected, and acquire a love of wild romance and florid exaggeration in preference to reality and simple truth. They are thus associated in their action with the Propensities

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[1] From Third Report, p. 20.

rather than with the Reflective faculties a
is taught to perceive, to love, and admire
qualities, phenomena, and laws of nature
power of appreciating the delicate and ex
simple truth will be evoked; and thus
grandeur, and perfection will be enlisted,
and moral improvement. This may be
fiction, by making truth or nature the pri
ary, means of cultivating these emotions
ideal or eclectic representatives of the forn

The importance of cultivating Ideality
Reports; its influence on the domestic ha
ledge of the Laws of Health will show
cleanliness, this faculty, by adding an im
purity, and refinement, and an instinct
and squalor, will aid the Intellectual facul
to their requirements.[1]

2. ON LAURA BRIDGMAN,—DEAF, DU
AND THE MODE OF

REFERRED TO,

The most attractive of all the pupils i
Blind is the girl Laura Bridgman,[2] now
has from infancy been deaf, dumb, and
sense of smell. She has grown consider
observe a distinct increase in the size o
region, in particular, has become larger,
portion to the Animal region. Her Ten
Sanguine. The head altogether is of full
the Domestic affections are amply develo
tions. Self-Esteem, Love of Approbation
scientiousness are all large. The anterior
both the Knowing and Reflecting departm
of Order are large, and she shows great tid

Phrenology leads us to understand that
lectual powers exist in great vigour and
to her successful education is the means of
Howe and his assistants, guided by this
in the work of educating her. I perceive
ment since last year. She manifests the
sex. When I placed my hand on her hea
but she did not interest herself to remove
of her countenance expresses intelligence

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[1] From Fifth Report, p. 9.

[2] George Combe twice visited the above A
Dr Howe (see p. 122), while in America from
by this remarkable pupil, and interested in the m

she is very happy. She has been taught the finger-alphabet, and converses readily with the masters and scholars. She has been instructed in writing also, and when informed of our names, she felt C.'s[1] dress and mine, recognise us as old acquaintances, recollected our visit of last year, and wrote in pencil the words—"Laura glad see Combe," and presented them to us.

Two of the pupils named Baker, to whom she was much attached, were absent on a visit to their friends, and she had worked a bag which she wished to send to them. She had just finished a letter to them, which she kindly allowed me to carry with me, as a specimen of her chirography, and said she would write another. It was in the following terms:—"Louisa and Elizabeth Baker.——Laura is well. Laura will give Baker bag. Man will carry bag to Baker. Laura will cry, Baker will come to see Laura. Drew" [another pupil] "is well. Drew give love to Baker. Laura Bridgman."

I asked Dr Howe by what means he succeeded in teaching her the connection between the letters "deliver," and the act of delivering, and so forth. He said that the meaning of all such words was communicated only by very frequent repetition of the act, and by writing the letters each time. He took a bag, for instance, and time after time made Laura deliver it to him, and write the letters, and thus he succeeded in connecting the mental conception with the words. She has large organs of Philoprogentiveness, and has a little doll which she caresses and dresses very neatly. She has a great admiration of ornaments, and was delighted with C.'s bracelets and brooch. She has a separate box for her own bonnet, and another for the other parts of her dress, and preserves them all in the greatest order. She has at present no ideas of Religion. Dr Howe waits for the further maturity of her organisation, and the greater development of her faculties, before he attempts to convey to her this species of knowledge; and, in the meantime, every one is enjoined not to allude to the subject, lest they should convey impressions that might render her unhappy, and which it might be impossible to eradicate.

I add the following particulars from the "Annual Report of the Trustees" of the Institution, for 1840:—

"There is one whose situation is so peculiar, and whose case is so interesting in a philosophical point of view, that we cannot forbear making particular mention of it; we allude to Laura Bridgman, the deaf, dumb, and blind girl.

"The intellectual improvement of this interesting being, and the progress she has made in expressing her ideas, is truly gratifying.

"She uses the manual alphabet of the deaf mutes with great facility and great rapidity; she has increased her vocabulary so as to comprehend the names of all common objects; she uses adjectives expressive of positive qualities, such as hard, soft, sweet, sour, &c.; verbs expressive of action, as give, take, ride, run, &c., in the present, past, and future tense; she connects adjectives with nouns to express their qualities; she introduces verbs into sentences, and connects them by conjunctions: for instance, a gentleman having given her an apple, she said, *man give Laura sweet apple.*

"She can count to high numbers; she can add and subtract small numbers.

"But the most gratifying acquirement which she has made, and the one which has given her the most delight, is the power of *writing a legible hand,*

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[1] Mrs Combe, called Cecilia. See p. 332.

and expressing her thoughts upon paper: she writes with a pencil in a grooved line, and makes her letters clear and distinct.

"She was sadly puzzled at first to know the meaning of the process to which she was subjected; but, when the idea dawned upon her mind that by means of it she could convey intelligence to her mother, her delight was unbounded. She applied herself with great diligence, and in a few months actually wrote a legible letter to her mother, in which she conveyed information of her being well, and of her coming home in ten weeks. It was indeed only the skeleton of a letter, but still it expressed, in legible characters, a vague outline of the ideas which were passing in her mind. She was very impatient to have *the man* carry this letter, for she supposed that the utmost limit of the Post-office Department was to employ a man to run backward and forward between our Institution and the different towns where the pupils live to fetch and carry letters.

"She has improved very much in personal appearance as well as in intellect; her countenance beams with intelligence; she is always active at study, work, or play; she never repines, and most of the time is gay and frolicsome.

"She is now very expert with her needle; she knits very easily, and can make twine bags and various fancy articles very prettily. She is very docile, has a quick sense of propriety, dresses herself with great neatness, and is always correct in her deportment. In short, it would be difficult to find a child in the possession of all her senses, and the enjoyment of the advantages that wealth and parental love can bestow, who is more contented and cheerful, or to whom existence seems a greater blessing than it does to this bereaved creature, for whom the sun has no light, the air no sound, and the flowers no colour or smell."[1]

"The following is an extract from the diary kept by her instructor:—

"'Spent one hour in giving Laura an idea of the meaning of the words left and right. She readily conceived that left hand meant *her* left hand, but with difficulty generalised the term. At last, however, she caught the idea, and eagerly spelt the name of her arms, hands, fingers, feet, ears, &c., as they were touched, and named them, right or left, as might be; suddenly pausing, however, and looking puzzled, she put her finger on her *nose*, and asked if that were left or right; thus she continually puzzles one: but such is her eagerness to find out one's meaning, such a zealous co-operation is there on her part, that it is a delightful task to teach her.

"'Uses to-day freely the prepositions *in* and *on*: she says teacher sitting *in* sofa:—do not dare to correct her in such cases of anomalous usage of the preposition, but prefer to let her be in error, rather than shake her faith in a rule given: the corrections must be made by and by: the sofa having sides, she naturally says *in*.'

"In her eagerness to advance her knowledge of words and to communicate her ideas, she coins words, and is always guided by analogy. Sometimes her process of *word-making* is very interesting; for instance, after some time spent in giving her an idea of the abstract meaning of *alone*, she seemed to obtain it, and understanding that being *by one's self* was to be alone, or *al-one*. She was told to go to her chamber, or school, or elsewhere, and return *alone*; she did so, but soon after, wishing to go with one of the little girls, she strove to express her meaning thus, Laura go *al-two.*

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[1] The account of the method of teaching her is so interesting that I have transferred it entire. (G. C.)—It is inserted here as full of practical instruction in teaching.

"The same eagerness is manifested in her attempts to define, for the purpose of classification: for instance, some one giving her the word bachelor, she came to her teacher for a definition. She was taught that men who had wives were *husbands,* those who had none, *bachelors;* when asked if she understood, she said, '*man no have wife bachelor—Tenny bachelor,*' referring to an old friend of hers. Being told to define bachelor, she said, '*bachelor no have wife, and smoke pipe.*' Thus she considered the individual peculiarity of smoking in one person as a specific mark of the *species bachelor.*

"Then, in order to test her knowledge of the word, it was said by her teacher, Tenny has got no wife, what is Tenny?

"She paused, and then said, '*Tenny* is *wrong!*'

"The word widow being explained to her, a woman whose husband is dead, and she being called upon to define, she said, '*widow is woman, man dead, and cold,*' and eked out her meaning by sinking down, and dropping her hand, to signify *in the ground.*

"The two last words she added herself, they not having been in the definition; but she instantly associates the idea of *coldness* and *burial* with death.

"Her having acquired any idea of death was not by the wish of her teacher, it having been his intention to reserve the subject until such a development of her reason should be attained as would enable him to give her a correct idea of it.

"He hopes still, by aid of the analogy of the germination and growth of plants, to give her a consoling hope of resurrection, to counterbalance the almost instinctive dread of death.

"She had touched a dead body before she came to the Institution.

"She easily acquired a knowledge and use of active verbs, especially those expressive of *tangible action;* as to walk, to run, to sew, to shake.

"At first, of course, no distinction could be made of mood and tense; she used the words in a general sense, and according to the order of her *sense of ideas;* thus, in asking some one to give her bread, she would first use the word expressive of the leading idea, and say, '*Laura bread, give.*' If she wanted water, she would say, '*water drink Laura.*'

"Soon, however, she learned the use of the auxiliary verbs, of the difference of past, present, and future tense; for instance, here is an early sentence, '*Keller is sick—when will Keller well;*' the use of *be* she had not acquired.

"Having acquired the use of substantives, adjectives, and verbs, prepositions and conjunctions, it was deemed time to make the experiment of trying to teach her to *write,* and to show her that she might communicate her ideas to persons not in contact with her.

"It was astonishing to witness the mute amazement with which she submitted to the process, the docility with which she imitated every motion, and the perseverance with which she moved her pencil over and over again in the same track, until she could form the letter. But when at last the idea dawned upon her, that, by this mysterious process, she could make other people understand what she thought, her joy was boundless.

"Never did a child apply more eagerly and joyfully to any task than she did to this, and, in a few months, she could make every letter distinctly, and separate words from each other.

"The following anecdote will give an idea of her fondness for teazing or innocent fun or mischief:—Her teacher, looking one day unobserved into the girls' play-room, saw three blind girls playing with the rocking-horse. Laura was on the crupper, another in the saddle, and a third clinging on the neck, and they were all in high glee, swinging backward and forward as far as the rockers would roll. There was a peculiarly arch look in Laura's countenance—the Natural Language of sly fun. She seemed prepared to give a spring, and suddenly, when her end was lowest, and the others were perched high in the air, she sidled quickly off on the floor, and down went the other end so swiftly as to throw the girls off the horse.

"This Laura evidently expected, for she stood a moment convulsed with laughter, then ran eagerly forward with outstretched hands to find the girls, and almost screamed with joy. As soon, however, as she got hold of one of them, she perceived that she was hurt, and instantly her countenance was changed; she seemed shocked and grieved, and after caressing and comforting her playmate, she found the other, and seemed to apologise, by spelling the word *wrong*, and caressing her.

"When she can puzzle her teacher she is pleased, and often purposely spells a word wrong with a playful look; and if she catch her teacher in a mistake, she bursts into an ecstasy of laughter.

"When her teacher had been at work giving her an idea of the words carpenter, chair-maker, painter, &c., in a generic sense, and told her the blacksmith made *nails;* she instantly held up her fingers and asked if the blacksmith made them, though she knew well he did not.

"With little girls of her own age, she is full of frolic and fun, and no one enjoys a game at *romps* more than Laura.

"She has the same fondness for a dress, for ribbons, and for finery as other girls of her age, and, as a proof that it arises from the same amiable desire of pleasing others, it may be remarked that, whenever she has a new bonnet or any new article of dress, she is particularly desirous to go to meeting, or to go out with it. If people do not notice it, she directs their attention by placing their hand upon it.

"Generally she indicates her preference for such visitors as are the best dressed.

"She is so much in company with blind persons that she thinks blindness common, and when first meeting a person, she asks if they are blind, or she feels for their eyes.

"She evidently knows that the blind differ from seeing persons, for, when she shows blind persons anything, she always puts their fingers on it.

"She seems to have a perception of character, and to have no esteem for those who have little intellect. The following anecdote is significant of her perception of character, and shows that, from her friends, she requires something more than good-natured indulgence:—

"A new scholar entered school—a little girl about Laura's age. She was very helpless, and Laura took great pride and great pains in showing her the way about the house, assisting her to dress and undress, and doing for her many things which she could not do herself. In a few weeks it became apparent even to Laura that the child was not only helpless, but naturally very stupid, being almost an idiot. Then Laura gave her up in despair and avoided her, and has ever since had an aversion to being with her, passing her by as if in contempt. By a natural association of ideas, she attributes to this child all those countless deeds which Mr *Nobody* does in every house,—if a chair is broken, or anything is misplaced, and no one knows who did it, Laura attributes it at once to this child.

"It has been observed before that she is familiar with the processes of addition and subtraction in small numbers. Subtracting one number from another puzzled her for a time, but, by help of objects, she accomplished it. She can count and conceive objects to about one hundred in number—to express an indefinitely great number, or more than she can count, she says *hundred*. If she thought a friend was to be absent many years, she would say—will come hundred *Sundays*, meaning weeks. She is pretty accurate in measuring time, and seems to have an intuitive tendency to do it. Unaided by the changes of night and day, by the light, or the sound of any timepiece, she nevertheless divides time accurately.

"With the days of the week, and the week itself as a whole, she is perfectly familiar; for instance, if asked what day will it be in fifteen days more, she readily names the day of the week. The day she divides by the commencement and end of the school, by the recesses, and by the arrival of meal-times.

"She goes to bed punctually at seven o'clock, and of her own accord. For some time after she came under our charge, she had some one to put her to bed every night; but soon it was thought best to send her alone, and, that she might not wait for any one, she was left alone one evening; and she sat until quite late, a person watching her; and at last she seemed to form her resolution suddenly—she jumped up and groped her way up to bed. From that time to this, she has never required to be told to go to bed, but, at the arrival of the hour for retiring, she goes by herself.

"Those persons who hold that the capacity of perceiving and measuring the lapse of time is an innate and distinct faculty of the mind, may deem it an important fact that Laura evidently can measure time so accurately as to distinguish between a half and a whole note of music.

"Seated at the pianoforte, she will strike the notes in a measure quite correctly.

"Now, it will be perceived that she must have a clear perception of the lapse of time, in order to strike the two-eighths at the right instant; for, in the first measure, they occur at the second beat, in the second measure, at the third beat.

"There is no doubt that practice will enable her to subdivide time still more minutely. Possibly, some attach an undue degree of importance to this power of measuring time, considered in a metaphysical point of view, for any one may make the same experiment upon himself, and by stopping his ears and closing his eyes, will find he can measure time, or the *duration of his sensation*, and know which of two periods is longest; nevertheless, we shall continue carefully to note the phenomena in the case of Laura, for the benefit of whom they may concern.

"It is interesting, in a Physiological point of view, to know the effect of the deprivation of three senses upon the remaining two.

"The sense of Smell being destroyed, it seems a curious question whether the effect upon the organ of Taste is general or particular; that is, whether the Taste is blunted generally, and for all things alike, or whether one kind of sapidity is more affected than another. To ascertain this, some experiments have been tried, but as yet not enough to enable one to state confidently the results in minute distinction. The general conclusions are these:

"Acids seem to make vivid and distinct impression upon the Taste, and she apparently distinguishes the different degrees of acidity better than of sweetness or bitterness. She can distinguish between wine, cider, and vinegar, better than substances like manna, liquorice, and sugar, Of bitters, she seems to have less perception, or indeed hardly any; for, on putting powdered rhubarb into her mouth, she called it *tea*, and on one saying *no*, and telling her to taste *close*, she evidently did try to taste it, but still called it tea, and spat it out—but without any contortion or any indication of its being particularly disagreeable.

"Of course, she has a repugnance to these kind of experiments, and it seems almost imposing upon her good-nature to push them very far; we shall, however, be soon able to ascertain certainly, how far she can distinguish different sapid bodies. Those who are curious in the Physiology of the Taste know that the highest degree of *gusto*, or the acme of pleasure, is not obtained until just as the morsel has slipped over the glottis, and is on its way beyond power of recal down the œsophagus. This seems to be a wise precaution of nature to prevent the stomach being cheated of its due; for, if the highest degree in pleasure of eating could be obtained without absolutely swallowing the morsel, the epicure could have an exhaustless source of pleasure, and need never degenerate into the *gourmand*.

"Some Physiologists who have speculated upon this subject, consider that this final climax of the pleasure of Taste is produced by a fine aroma which, rising from the morsel and mounting up the fauces, pleasantly titillates the ramifications of the olfactory nerve. The fact that, when we have a cold in the head and the fauces are obstructed, the Taste is blunted, seems to bear out this supposition; but, from some observations on Laura, one would be inclined to think that some other cause must contribute to the effect.

"She appears to care less for the process of mastication than deglutition; and probably it is only the necessity of mechanical trituration of food, which induces her to go through with it, before hastening to the pleasant part of swallowing. Now, as the imperfection of smell impairs the taste in the tongue and palate during mastication, it should have the same effect in deglutition, supposing this theory to be correct: but it seems not to be so—else Laura would have little inducement to swallow, save to fill a vacuity of stomach. Now, it seems doubtful whether the feeling of vacuity of stomach, strictly speaking, would show a child the road for the food, or whether it would not be as likely to stuff bread into its ear as into its mouth, if it had no pleasurable sensation in tasting; and further, if the pleasurable sensation did not increase and tempt to deglutition, it is doubtful whether hunger or vacuity of stomach *alone* would teach a child to swallow the chewed morsel. On the whole, she seems to care less for eating than most children of her age.

"With regard to the sense of Touch, it is very acute, even for a blind person. It i [illegible] narkably in the readiness with which she distinguishes persons;

there are forty inmates in the female wing, with all of whom of course Laura is acquainted; whenever she is walking through the passage-ways, she perceives, by the jar of the floor, or the agitation of the air, that some one is near her, and it is exceedingly difficult to pass her without being recognised. Her little arms are stretched out, and the instant she grasps a hand, a sleeve, or even part of the dress, she knows the person, and lets them pass on with some sign of recognition.

"The innate desire for knowledge, and the instinctive efforts which the human faculties make to exercise their functions, is shown most remarkably in Laura. Her tiny fingers are to her as eyes, and ears, and nose, and most deftly and incessantly does she keep them in motion; like the feelers of some insects which are continually agitated, and which touch every grain of sand in the path, so Laura's arms and hands are continually in play; and when she is walking with a person, she not only recognises everything she passes within touching distance, but, by continually touching her companions hands, she ascertains what he is doing. A person, walking across a room while she had hold on his left arm, would find it hard to take a pencil out of his waistcoat pocket with his right hand, without her perceiving it.

"Her judgment of distances and of relations of places is very accurate; she will rise from her seat, go straight towards a door, put out her hand just at the right time, and grasp the handle with precision.

"When she runs against a door which is shut, but which she expected to find open, she does not fret, but rubs her head and laughs as though she perceived the ludicrous position of a person flat against a door trying to walk through it.

"The constant and tireless exercise of her feelers gives her a very accurate knowledge of every thing about the house; so that if a new article, a bundle, bandbox, or even a new book, is laid anywhere in the apartments which she frequents, it would be but a short time before, in her ceaseless rounds, she would find it, and from something about it, she would generally discover to whom it belonged.

"She perceives the approach of persons by the undulations of the air striking her face; and she can distinguish the step of those who tread hard, and jar the floor.

"At table, if told to be still, she sits and conducts herself with propriety; handles her cup, spoon, and fork, like other children; so that a stranger looking at her would take her for a very pretty child, with a green ribbon over her eyes.

"But, when at liberty to do as she chooses, she is continually feeling of things, and ascertaining their size, shape, density, and use—asking their names and their purposes, going on with unsatiable curiosity, step by step, towards knowledge.

"Thus doth her active mind, though all silent and darkling within, commune by means of her one sense with things external, and gratify its innate craving for knowledge by close and ceaseless attention.

"Qualities and appearances, unappreciable or unheeded by others, are to her of great significance and value; and, by means of these, her knowledge of external nature and physical relations will in time become extensive.

"If the same success shall attend the cultivation of her Moral nature, as has followed that of her Intellect and her Perceptive faculties, great will be the reward to her, and most interesting will be the results to others."[1]

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[1] America, vol. iii. pp. 187 and 456.

No. IV.—ON THE TERM "SECULAR," AS APPLIED TO THE SECULAR SCHOOLS OF GEORGE COMBE AND HIS FRIENDS.

REFERRED TO, IN THE INTRODUCTION, part iv., and p. 258.

BELMONT, TWICKENHAM,
17*th Decr.* 1877.

DEAR SIR,—I fully admit the justice of your remarks on the mischievous influence of the title which was selected for the Edinburgh school. Looking at the term "Secular," as now very commonly understood, it may appear to many that we chose it in a spirit of defiance and opposition; that our school was, after all, as narrow and sectarian as any already existing, being merely a school of the "Secularists."

This, however, was by no means the case. When we decided to adopt the name "Secular School," the word "Secular" had quite a different meaning from that which it has since acquired. When the school was established (1848), there existed no sect naming themselves Secularists, or publicly so-called by others. The term "Secular" had been revived and frequently used by Mr Combe in its original and etymological sense, as designating that which only belongs to our present state of existence. Used in this sense, it exactly described the limit of our teaching.

Religion was not excluded from the Secular School, Theology was not excluded from the Secular School, but the Religion and the Theology were purely Secular; the Divine authority of the Moral Law was especially and most powerfully enforced in Mr Combe's teaching, and not only moral law and moral duties, but physical law and physical duties were based on the same authority, but only applied to the world. Mr Combe, for example, did not merely teach that "cleanliness is next to godliness," but that "cleanliness is godliness." He showed that the structure of the skin implied a Divine command that we should keep it clean, and for this and every other duty, great or small, he maintained that the primary and leading motive should be obedience to the will of God, as revealed in His works. This constituted the very essence and foundation of all his teaching; but, nevertheless, neither he nor I ever touched the subject of Revealed or Supernatural Religion, or taught anything concerning a future state. This was left to the special teachers, on the ground that the differences of Religious sects usually commence there.

We hoped that the word Secular would be understood accordingly, and we selected it as a specially colourless name. But, some time *after* the establishment of the school, a section of very highly-coloured controversalists, generally reputed as holding atheistical opinions, rather formally adopted the title of "Secularists."

I believe that it was in "The Reasoner," edited by Mr Holyoake, that this application of this title was first proposed, discussed, and finally announced as adopted.

Lectures on "Secularism," or rather denunciations of "Secularism," suddenly became fashionable. At one of these, delivered in a chapel in Edinburgh, I heard "Secularism" described as a system of atheism, which denied morality, human responsibility, sanctioned unlimited sensual indulgence, &c., and, after the definition, the lecturer or denouncer, a minister named Rutherford, proclaimed Mr Combe as "the High Priest of Secularism;" in proof of which he quoted the name of the School. This, of course, did us some damage, and was very annoying. To have changed the name of the school, in submission to such misrepresentation, would have been still more damaging.

I need scarcely add, that, had we foreseen this perversion of the name, we should never have adopted it; as neither Mr Combe nor anybody else concerned in the promotion and carrying on of the school were at all afflicted with that vanity of obtrusive ostentatious heterodoxy, which too often magnifies Theological differences, and needlessly provokes the immoralities of Theological odium.—Yours truly, W. MATTIEU WILLIAMS.

To Wm. Jolly, Esq.,
H. M. Inspector of Schools, Inverness.

No. V.—ON NATIONAL UNSECTARIAN SECULAR EDUCATION.

1. "THE PLAN FOR THE ESTABLISHMENT OF A GENERAL SYSTEM OF SECULAR EDUCATION IN THE COUNTY OF LANCASTER," issued in 1847, by "The Lancashire Public School Association," afterwards called "The National Public School Association."

REFERRED TO, pp. 237, and 590.

TO THE PEOPLE OF LANCASHIRE.

A number of gentlemen of various religious denominations, resident in this county, feeling a deep interest in the education of the people, have drawn up the following plan for the establishment of a system of Popular Education in the county of Lancaster, which they respectfully recommend to the attentive consideration of all classes, sects, and parties, in the earnest hope that they may be induced to recognise the soundness of the principles on which it is based, and to demand of the legislature the powers which are necessary to carry it into effect.

On no great question which has agitated the public mind for a very long period, has a greater diversity of opinion existed than on the subject of Popular Education. Yet, amidst all this variety of opinion, there appears to be a general recognition of the value of education, and an increasing belief in the necessity that exists for promoting its extension among the people.

For ourselves, we believe there is no safeguard for civil and religious liberty, no security for the rights of property and labour, nothing within the scope of merely human agency which can conduce to the material, the moral, and the religious well-being of the people, equal to a universal diffusion of education.

Deeply impressed as we are with this belief, it is no less our conviction, that the vast benefits of education may be, to a great extent, neutralized, if it be conducted on false or erroneous principles. If, as in countries governed by despotic power, the duty of educating is assumed by the government, the minds of the people may be pressed down into bondage, rather than elevated to freedom. If, as with us, the education of the people is entrusted to the voluntary efforts of certain sections only of the community, that large portion of the people unconnected with any religious denomination is abandoned altogether to chance, or to what is worse than chance, to utter exclusion from all instruction.

To adopt a course between those two extremes, we hold to be the part of a free and enlightened nation; and to point out the means by which we conceive such a course may be pursued, is the object we have in view. In thus intimating our belief that voluntary effort is not equal to the necessities of our condition, we must guard against the supposition, that we are insensible to the vast amount of good which has been effected by it. The national gratitude is due to those who have so nobly struggled for the emancipation of their fellow-men from the bonds of ignorance.

But, in our gratitude to them, let us not forget the claims of society at large; let us not forget that our gaols are filled with criminals, the ignorance of a large majority of whom is sufficient evidence that the existing educational agencies have not embraced the whole of the population; let us not forget that, if we had built school-houses instead of gaols, many of our criminals might have been honest and respectable members of the community. We do not assert that universal education would wholly prevent crime; but we do say that it would be the means of greatly diminishing it.

The plan adopted by the Government for aiding voluntary effort, is, we conceive, in one essential respect, imperfect, considered apart from the conscientious objections which are felt to it by great numbers of Dissenters. The Government gives money in proportion to the amount raised by voluntary subscription; aid must, therefore, be granted in an inverse ratio to the necessities of the people. In localities where the congregation is poor and stands most in need of help, the smallest amount of assistance is afforded. We believe that the only fair and equitable mode of raising and apportioning public money for the purposes of education, is to give to the people themselves, in their various localities, the power of taxing all equally, and of exercising control over the expenditure.

As all should contribute to the support of public schools, so all should have the right of admission to them. And, in order that none may be directly or indirectly debarred from the exercise of this right, nothing should be taught in the schools which would practically exclude any. All catechisms and creeds should, as a measure of simple justice to all, be strictly excluded. None will deny the value of Religious instruction; but the most effectual barriers should be provided against the introduction of Sectarian teaching. In the words of the Honourable Horace Mann, Secretary to the Board of Education, Massachusetts, United States, "Our aim obviously is, to secure as much of religious instruction as is compatible with religious freedom."

To give the greatest possible efficiency to the public schools, and to protect the rights of every section of the people, a central board for collecting and diffusing information, and with certain other limited powers, should be established, deriving its authority from the people, and responsible to them for the exercise of it.

The public schools we propose to establish, should not be considered merely as schools for the poor. The education given in a large proportion of schools established for the middle classes, is of a very inferior character; at the present time, some amongst the very poor receive a better education than those who occupy a position somewhat more elevated in the social scale. By the latter, we anticipate that the establishment of a system of education for the whole people will be hailed with satisfaction.

Such are the chief features of the following plan, and such the objects we have had in view in its construction.

We entertain a strong hope and belief that the public mind is becoming daily more convinced of the truth of the principles on which it is founded. We have proposed to confine it to this county, because we believe it will meet with a warmer support from some, and a less decided opposition from others, than if it had been proposed for the country at large, and because we believe that in this county are to be found men pre-eminently qualified to carry out such an experiment with spirit and success.

Divisions of the County.—The county of Lancaster is divided into six Hundreds or Wapentakes.

School Committees.—Every parish or township in the county, containing 2000 inhabitants or upwards, shall be required to appoint annually a school committee, consisting of numbers in the following proportion to the population.

The school committees shall be required to establish and support the following four descriptions of schools; for which purpose they shall be empowered to levy rates.

Schools:—1st. Common Day Schools, for children from five to fifteen years of age.

In which they shall be instructed in reading, grammar, writing, arithmetic, geography, and such other kinds of useful Secular information as may be deemed advisable, or the growing intelligence of the people may demand. In addition to these, a sacred regard to truth, justice, kindness, and forbearance in our intercourse with our fellow-creatures; temperance, frugality, industry, and all other virtues conducive to the right ordering of practical conduct in the affairs of life. And inasmuch as these virtues, together with Reverence and Love towards the Divine Being, are clearly taught and powerfully enforced in the Scriptures, a selection of examples and precepts inculcating them shall be made therefrom, and read and used in the said schools, but without reference to the peculiar theological tenets of any religious sect or denomination.

For the purpose of making this selection, a commission shall be appointed by the county board, consisting of nine individuals, no two of whom shall be members of the same religious denomination; and in order that the peculiar tenets of no religious sect may be favoured, the unanimous concurrence of the commission shall be required in the selection.

2nd. Evening Schools, for persons of the age of ten years and upwards.

Under the same regulations as the day schools.

3rd. Infant Schools, for children under six years of age.

4th. Industrial Schools, for the purpose of affording food and shelter during the day to that portion of the juvenile population, which has no apparent means of subsistence, save by begging or crime; of instructing them in the foregoing branches of education, and in some industrial occupation, which may lead them to prefer a life of useful activity to one of idleness, rescue them from destitution and misery, and give them an opportunity of becoming honest and respectable members of the community.

RIGHT OF ADMISSION TO THE SCHOOLS.—All children shall have the right of free admission, at the ages before mentioned, to the day, evening, or infant schools of the parish, township, or school union, in which they reside; except such as do not possess the faculties of hearing, speech, or sight—such as are of unsound mind, afflicted with any contagious disorder, or convicted of crime.

Note.—School committees may, in special cases, relax the rule excluding children convicted of crime.

POWERS AND DUTIES OF THE SCHOOL COMMITTEE.—The school committee shall have power to engage and dismiss masters and teachers, and to decide on all matters relating to the management of the schools, subject to the following regulations:—

1. Nothing shall be taught in any of the schools which favours the peculiar tenets of any religious sect; and in order that perfect security may be afforded, any ratepayer shall have the right to complain to the school committee of the conduct of any teacher in this respect; and in case of dissatisfaction with the decision of the school committee, he shall have the right to appeal to the committee of the hundred; and, if dissatisfied with their decision, to the county board of education, and from the decision of the county board to the courts of law and equity.

2. No clergyman of the Church of England, nor any Dissenting minister, nor any ecclesiastic of the Catholic Church, shall be capable of holding any salaried office in connection with the schools.

3. No master or teacher shall be appointed to any school who has not received a certificate of his qualification from the examiners appointed by the county board, so long as there is a candidate for the vacancy who has received a certificate; unless the county board, on special cause shown to it, shall authorise the school committee to dispense with the certificate.

4. No book shall be admitted into any school which has not first received the sanction of the county board.

5. The course of education recommended by the county board, shall be pursued in all the public schools in the county.

As it is of the first necessity to create in the minds of the people a desire for education and a just estimate of its benefits, it shall be the duty of the committees to endeavour to create this desire by communicating personally, or by means of agents, with the parents and guardians of those children who are receiving no education.

Each school committee shall furnish to the county board an annual report of the schools under its management, and shall at all times furnish such information as may be required by the board.

Each school committee shall annually publish, in a cheap form, for the use of the ratepayers, a statement of all moneys received and expended by them, and present a copy of the same to the committee of the hundred and to the county board.

School committees shall have power, in special cases, to relax the rule excluding children convicted of crime from the day, evening, or infant schools, and to expel any child for any gross insubordination or misconduct.

School committees shall have power to appoint a clerk with a salary.

COMMITTEES OF THE HUNDRED.—In each hundred, a central committee shall be annually elected by the school committees within the hundred.

POWERS AND DUTIES OF THE COMMITTEES OF THE HUNDRED.—1. To unite parishes or townships containing less than 2000 inhabitants into school unions, which unions shall act in every respect as if they were parishes or townships of themselves.

2. If the majority of the ratepayers of any parish or township present at a public meeting, called for the purpose, object to be united with any other parish or township, they shall have the right of appeal from the decision of the committee of the hundred, to the county board.

3. If any parish, township, or school union neglect to establish or support schools, the committee of the hundred shall levy rates for the purpose, and appoint a school committee for such parish, township, or union.

4. To admonish or dismiss teachers whose conduct is brought under their notice by appeal from the decision of the school committees.

5. The committee of the hundred shall have power (but it shall not be imperative on them) to establish schools for the deaf, dumb, and blind, and to draw a sum for their support from the school rates of each parish, township, or school union, in proportion to its population.

6. The committee of the hundred shall form a corporation, in which shall be vested the whole school property of the hundred, in order that, if the necessity for the maintenance of a school in any parish, township, or school union shall cease, the property may be made available to some other place within the hundred. In this corporation may also be vested any other property conveyed or bequeathed for educational purposes within the hundred.

7. The committees of the hundred shall annually furnish to the county board reports of their proceedings, statements of all moneys received and expended by them, and, at all times, such information as may be required by the board.

8. The committee of the hundred shall have power to appoint a clerk, with a salary.

COUNTY BOARD OF EDUCATION.—A county board of education shall be established, consisting of twelve persons, of whom not more than three shall be members of any one religious denomination. The board shall consist in the first instance of the following persons, viz.:—(*In this place should be inserted the names of the twelve persons composing the first county board.*)

Two of the members who have attended the fewest meetings of the board shall retire annually, but may be re-elected. All vacancies shall be filled up by a majority of the votes of the members of all the committees of hundreds. The board shall elect annually a president. Five members shall form a quorum.

DUTIES AND POWERS OF THE COUNTY BOARD.—1. The board shall appoint annually a secretary, at a salary of not less than £500, nor more than £800, per annum; and two inspectors at salaries of at least £200 each per annum.

The concurrence of two-thirds of the members present shall be necessary in the appointment of the secretary and inspectors.

2. It shall be necessary for the board to sanction all books before they are admitted into any of the schools; and no book shall receive the sanction of the board which favours the peculiar tenets of any religious sect. Objections made in writing by any three members of the board, to any book, on the ground that it favours the peculiar tenets of any religious sect, shall prevent such book from being introduced into any of the schools.

3. The members of the board, or their secretary, or inspectors, shall have power to enter the public schools at all times, to examine into the progress made by the scholars, into the course of instruction pursued, and into all matters relating to the management of the schools.

4. It shall be the duty of the board to admonish or dismiss for the first offence, and for the second offence to dismiss, any teacher whose conduct shall be brought under its notice by appeal, and who shall appear to it to have favoured in his teaching any peculiar theological opinions.

5. If any township, parish, or school union, shall neglect to establish and support schools, and if the committee of the hundred in which such parish, township, or school union is situated, shall neglect to use the power given them to supply the deficiency, it shall be the duty of the county board to establish schools, to levy rates on such parish, township, or school union, for their establishment and support, and to appoint a committee to manage them.

6. The county board shall draw up such a plan of education as it shall deem best suited to the four descriptions of public schools, which it shall recommend to the school committees, and it shall be the duty of the board to enforce its adoption.

7. The board shall obtain from the school committees whatever information it may require relating to the condition and management of the schools, and present annually to the two houses of parliament, and to every school committee, a detailed report of the state of education in Lancashire.

8. The board shall procure as much information as possible of the state of education in this kingdom, on the continent of Europe, and in America, and convey whatever may appear needful to the different school committees.

9. As an incitement to diligence and good conduct on the part of the pupils in the local schools, the county board shall have power to expend £2000 annually in maintaining, at the normal school, a number of such pupils as shall be reported by the school committees to be deserving of such reward, and shall pass through such a course of examination by the public examiners as shall be decided on by the county board.

10. The expenses incurred by the board shall be defrayed by the parishes, townships, and unions, in proportion to their population.

11. The board shall form a corporation, in which shall be vested the property belonging to the normal schools, and in which may be vested any other property conveyed or bequeathed for the establishment or support of normal schools, colleges, libraries, or for any other educational purposes, for the use of the county generally.

EXAMINATION OF TEACHERS.—1. The county board shall appoint three competent persons to examine candidates for the office of master or teacher.

2. The examiners shall have power to decide on the qualification of candidates, and to grant or refuse certificates accordingly.

3. In order to ensure impartiality in the decisions, the same test of fitness shall be applied to all applicants for certificates in the same branches of knowledge, and the course of examination shall be laid down by the county board.

4. The time and place at which examiners shall meet for the purpose of examining candidates, shall be appointed by the county board, and at least a month's notice, previous to any examination, shall be given by advertisement in the principal county papers.

5. The county board shall have power to fix the salaries of the examiners, at a sum not exceeding £ each per annum; and every applicant for a certificate shall pay to the board a fee of on registering his name.

6. The certificate shall be the property of the person to whom it is granted, and, if delivered up by him to any of the school committees, it shall be returned to him on demand.

7. If any applicant is dissatisfied with the decision of the examiners, he shall have the power of appeal to the county board, which may then grant him a certificate if it think fit.

NORMAL SCHOOLS.—1. The county board shall establish and support one or more normal schools, for the training of teachers. It shall have power to engage and dismiss teachers, to decide on the course of instruction to be pursued, and on all matters relating to the management of the normal schools.

2. Nothing shall be taught in the normal schools which favours the peculiar tenets of any religious sect.

3. The county board shall have power to draw from the townships, parishes, and school unions, in proportion to their population, the sums necessary for the erection of buildings for the normal schools. The current expenses shall be defrayed by the pupils, or by the townships, parishes, or school unions, for whom the pupils are in training.

4. It shall be optional with the school committees whether they engage teachers who have been educated in the normal schools or not.

The following are extracts from the "Explanatory Remarks" appended to the foregoing Plan :—

EVENING SCHOOLS.—No plan of popular education would be complete which did not provide for the establishment of evening schools. They are fully as important as day schools. The very early period of life at which children are employed in agricultural and manufacturing occupations, renders necessary some provision for enabling them to receive instruction after the labours of the day are over. The knowledge which a child can acquire before he is ten years of age, must of necessity be extremely limited; and to afford him no facilities for adding to his stock of information after that age, is almost to render useless the instruction he has previously received. It must also be remembered, how insufficient has been the education of a large proportion of those who form the adult population of the present time.

By the term adult, we do not refer exclusively to those who have attained their legal majority, but to all who have passed the age at which the education of youth is ordinarily concluded. The promoters of this plan are able to speak, from their own experience, of the desire that exists on the part of many adults to acquire the knowledge which the neglect or poverty of others has deprived them of in youth. For such as these, it would be well to establish separate classes in the schools, in order that none might be deterred from availing themselves of the advantages offered to them, by a feeling of shame at exposing their ignorance to the younger scholars. The good that might be effected by such means among the labouring population is incalculable. Nothing that could be devised would offer so formidable a barrier to the spread of intemperance; nothing would tend so much to refine and elevate the working man, and enable him to seek relaxation in Mechanics' Institutions, Libraries, and Reading Rooms, instead of in the low and degrading pursuits, which are almost the only species of amusement open to those who have the misfortune to be wholly uneducated.

Let it not be supposed that this would have any tendency to undermine the independence of the working man. The expenses of the schools being defrayed by rates, every man would feel that, directly or indirectly, he contributed his share to their support, and would therefore receive the benefits conferred by them as a right, and not as a favour. It cannot be too often repeated that nothing can render men so truly independent as knowledge.

The same buildings would suffice for both the day and evening schools, but it would probably be necessary to appoint additional teachers for the latter.

SECULAR EDUCATION—SELECTIONS FROM THE SCRIPTURES.—In denominating the system here proposed, a Secular system of education, we take the word Secular in its most comprehensive sense, and prefer a negative to a positive definition of it. We would say that it includes every thing which is not theological, or in other words, any thing which does not favour the tenets of any religious sect. In the choice of books, it would seem absurd altogether to exclude the Bible, on the ground that certain portions of it unhappily occasion differences of opinion among the various religious bodies. That the whole of it cannot be admitted without causing strife, is deeply to be regretted, and it is surely preferable to allow the introduction of such portions as can be introduced without offence to any, than to exclude the whole. It may at first sight appear difficult to obtain nine individuals of nine different denominations who could be unanimous in agreeing to a volume of selections from the Scriptures. But the difficulty vanishes when we consider, that in effect every one of the nine commissioners would possess an absolute veto on any selection proposed to be made. No single passage could be selected if objected to by the representative of any one of the nine different denominations. No necessity for discussion or argument would arise; the simple objection of one individual would be fatal to any passage proposed for selection.

A selection from the Scriptures having been once adopted, the purpose for which the commission was appointed would be accomplished, and it would therefore cease to exist. It would, however, be competent to the county board, at any time to appoint another commission, for the purpose of revising the selection.

The composition of the commission as here proposed, is obviously intended to prevent the introduction into the schools of any portion of the Scriptures, which may appear, when taken by itself, to militate against the tenets of any religious denomination. Every denomination possessing one representative would be as amply protected as if its views were represented by one-half of the members composing the commission.

SECURITIES AGAINST SECTARIAN TEACHING.—We conceive that ample security, in this respect, is afforded by the proposed mode of making the selections from the Scriptures; by the constitution of the county board, of which not more than one-fourth can be members of any one religious denomination; and by the right of appeal possessed by the ratepayers, from the school committees to the committee of the hundred, from them to the county board, and ultimately to the courts of law or equity. This right of appeal would be found a most substantial protection against sectarian teaching in the school. In Mr Combe's *Notes on National Education and the Common Schools of Massachusetts*, he says: "In almost every district, there are individuals sufficiently patriotic and enlightened to enforce the law on those who are indifferent to its execution; in every district, there are active members of every sect who watch, denounce, and expel sectarian teaching." We cannot doubt that the same vigilant superintendence would be exercised in this country; and that those who have distinguished themselves by their voluntary exertions and their munificent contributions for the education of the people, would ever be found ready to stand forward as the defenders of the rights and interests of their poorer brethren.

EXCLUSION OF MINISTERS OF RELIGION FROM SALARIED OFFICES.—We beg especially to direct the attention of the reader to the fact, that as it is not proposed to remunerate the individuals holding the offices of committee men in the townships or in the hundred, or the members of the county board, ministers of religion would not be prevented from holding those offices. In proposing the provision rendering clergymen of the Established Church, Dissenting ministers, and ecclesiastics of the Catholic Church incapable of holding any *salaried* offices connected with the schools, we have been solely actuated by a desire to prevent any cause of distrust. Suppose—for the sake of example—that, in any township where members of the Established Church preponderated, a clergyman of that Church were appointed a master in the public school; how difficult would it be for dissenters to believe that, conscientious as he might be, he could altogether avoid making use of his position to propagate his principles! Reverse the case, and imagine a dissenting minister appointed to the office of schoolmaster, a similar fear would be felt by Dissenters of other denominations as well as by members of the Established Church; and, without intending the slightest offence to our Catholic fellow-countrymen, we have only to hint at the possibility of an ecclesiastic of the Catholic Church, of the order of Jesuits, being appointed a schoolmaster, to awaken in the minds of Protestants a full sense of the propriety of the exclusion we recommend.

We are not insensible to the peculiar fitness of ministers of religion (qualified as many of them are by the possession of commanding talents and extensive knowledge) for superintending the education of the people; and in confining the restriction against them to *salaried* offices, ways are left open in which their valuable services may be made available to the community.

EXAMINATION OF TEACHERS.—It is with a high appreciation of the importance and true dignity of the office of schoolmaster, and with a desire to elevate it in the public estimation, that we propose to institute an examination into the qualifications of candidates for appointments in the public schools.

Nothing will more tend to promote the efficiency of the schools, and to stimulate the desire of the people for education, than the erection of a high standard of excellence for teachers.

Length of probation is too often taken as a proof of competence: nothing can be more absurd or fallacious. Natural aptitude or previous acquirements will enable some men to become qualified with a much shorter course of study than others. Why should the former be compelled to lose time after they are duly qualified, or the latter to relinquish study before they are so, by fixing the same period of probation for both?

The best test of fitness is examination, and the examination should be open to all comers, no matter when, where, or how their qualifications have been acquired. Those persons trained in the county normal schools should have no exemption from the test of an examination, but should be placed on precisely the same footing as others.

Individuals possessing certificates granted by the examiners, would find them of great service, if they became applicants for the office of schoolmaster, in other schools than those it is here proposed to establish. We do not doubt that these certificates would be found to possess a current value beyond the limits of this county, and that people would come from other parts of the kingdom desirous to obtain such a testimonial to their qualifications. It is on this account that we propose to exact a fee from all applicants for examination, as it would be unjust to charge the county with the expense of examining persons not intending to apply for offices in the public schools.

NORMAL SCHOOLS.—Of the propriety of establishing Normal Schools for the training of teachers, we apprehend there will be no difference of opinion.

Without teachers fully competent to convey instruction, the expenses incurred in the establishment and support of schools would be comparatively thrown away. The supply of properly qualified teachers is totally inadequate to the requirements of the schools already in existence; how much less adequate would it be, if a great additional demand was created by the establishment of public schools, with no additional source being provided from which the demand could be supplied! One great advantage of providing competent instructors is commonly overlooked. Under an efficient teacher, a child will acquire a given amount of knowledge in half the time that he will do under an incompetent one. In a country where the labour of the young forms a large proportion of the means of subsistence possessed by the working classes, as it does in England, and especially in Lancashire, this is a most important consideration. The length of time necessary to acquire even the mere rudiments of education, in a very large number of the schools now in existence, is, no doubt, one cause of the disinclination of parents to send their children to them, and of the children to attend. Every day more than is necessary, spent at school after a certain age, is so much valuable time, or its equivalent in money, withdrawn from the family stock. If we add, to this loss of time or money, the weekly payments that have to be made under the present system for schooling, and consider in how many cases the progress made by the pupil is scarcely perceptible from month to month; we cannot wonder that the disinclination on the part of the parent should exist, or that it should be difficult to impress either parents or children with a sense of the advantages of education. In the United States, the period of the attendance of children at the schools is very short; and the fact is sometimes quoted by the opponents of a general system, to show that the condition of the people with regard to education in the States is not what it would appear to be from statistics. But a very different conclusion can be drawn from the same fact in conjunction with another. All travellers concur in stating, that the great mass of the people in the United States is much better educated than in this country. If, during their short attendance at school, the children are able to acquire a greater degree of knowledge than children in England during a longer period, one of two things necessarily follows; either that the capacity of American children is greater than that of English, or that their teachers are better qualified. That the latter of these suppositions is the correct one cannot for a moment be doubted. The establishment of normal schools, as proposed in this Plan, would, to some extent, remedy the deficiency in schools already in existence; because, while it would be optional with the school committees to engage their teachers from the normal schools, so it would be optional with the teachers to accept engagements in the public or in private schools.

Such is the plan which we submit to the consideration of our fellow-countrymen of this county. We are not prepared to say that it is, in every one of its details, the best that could be devised; but it is our deep conviction that it is based on sound principles, and that no plan for general education is worthy the adoption of a free people, in which the management is not placed under popular control, and in which the equal rights of the various religious denominations, and of the different classes of the community, are not recognized and secured.

On a question on which there has ever been so great a diversity of sentiment, it is not to be expected that men of all shades of opinion should suddenly become reconciled. But we appeal to all classes; to those in high places and of great wealth, who may rely on it there can be no protection to property, no security for the maintenance of public order, like an educated people; to those whose wealth is in their labour, and whom education will enable profitably to employ the faculties of the mind as well as the powers of the body; to the advocates for the extension of political privileges, who may rest assured that these can only be obtained by an enlightened population; to the philanthropist, who would rejoice to see misery, intemperance, and crime disappear before the light of knowledge; and to the truly pious and enlightened of all classes and of all creeds, who believe that emancipation from brutish ignorance is not a hindrance but a help to the reception of divine truth: to all these we appeal with earnestness to lay aside the bitterness of controversy, and to approach the consideration of this momentous question in a spirit of conciliation, benevolence, and justice.

2. EXTRACTS FROM "A MEMORIAL ON BEHALF OF A NATIONAL SYSTEM OF EDUCATION," BY THE GLASGOW PUBLIC SCHOOL ASSOCIATION.

REFERRED TO, p. 224.

At a meeting of the above Association, held on the 9th of February 1854, John Tennant, Esq., of St Rollox, in the chair, a series of nine resolutions, embodying almost entirely the same views as the Lancashire Association, were adopted, and a Memorial embodying these directed to be addressed and sent to Earl Granville, then Lord President of the Council on Education. The following are extracts from the Preliminary note and the Memorial, which were drawn up by Professor Nichol of the Glasgow University :—

"'But it does appear singular, that in face of success elsewhere so abundant, in face of the virtual acceptance of so many of its principles—parliamentary authorities should continue to denounce our Secular scheme as not a 'practical' one. This word, my Lord, is ambiguous: it has, at least, two meanings. First, it may signify that it would be difficult to *enact* the Secular system—a difficulty which, unquestionably, is not diminished by such declarations. Great reforms, my Lord, are never easily realised ; but we respectfully submit, that, in those days, no statesman need lose hope, or turn round when confronted by obstacles, provided he can broadly appeal to the public reason, and knows that great and beneficent consequences will attend success. The word, however, has a second, and more important signification. It may mean that the scheme proposed, as a basis, is not adequate to sustain the fabric proposed to be raised upon it. Now, if it be the aim of Government to construct, at present, a system of education worthy to be called NATIONAL ; if it be its aim to do essential Justice—to act with an equal beneficence towards all classes of its subjects, whatever their station or creed; if it be its ambition to lay foundations that cannot be shaken, and to place a structure thereon, not only in harmony with existing circumstances, but which no change that is visibly imminent in society, shall avail to disturb: then, my Lord, we shall take leave to assert, that only through their relations to the scheme termed 'Secular,' and in exact proportion to the closeness of these relations, have the recent proposals of the Scottish minister—skilfully as they have been contrived, and ably as they have been expounded—their just and proud title to that rare merit involved in the epithet 'practical.'"

"Can it fail to be evident how unjustifiable is that rude, but far from uncommon, imputation which describes such a scheme as *irreligious?* The Secular scheme is not based on the assertion, that regard to Religious Sentiment and Belief, should be held of inferior moment in the training of the young; but expressly on the very different proposition, that, unless the suggested separation is made, and dogmatic teaching left to the care of the different Churches—whose willingness and ability to undertake and execute the task, we shall be the last to doubt—a true and effective system of National education is, under existing circumstances, impossible. Still less does it follow, that the character of the teacher chosen under such a system, although unguaranteed by tests, need be irreligious: or that what we have designated 'secular' and 'moral' training should not involve care for all Religious elements really operative in the mind of the child. The character and bearing of the teacher, as to his effective relations to God, would, of course, fall to be weighed, along with other points of character, by the persons having the power of nomination. And it would be open, in every such school, to draw out, by every auspicious method, those primary Religious Sentiments, on the ground and vitality of which all true belief must be based; as well as to accomplish another object, no less vital, viz. :—to guard and enforce the sincerity and integrity of the Understanding—thereby instructing and confirming the pupil in the exercise of Conscience, in reference to all phases of every momentous question that, in maturer years, may engage his attention or influence his fates. Although claiming the privilege of dealing, in our schools, with these comprehensive elements of true character, we have yet chosen to limit the phraseology of our resolutions to 'Moral Training;' and our reason is, that the phrase, 'Religious Instruction' is not understood by any of the parties at present struggling for ascendancy, in a sense corresponding to that now explained. For the most part, these sections of our countrymen appear to consider, that no training can be *Religious*, if dissevered from the presentation of the transcendental doctrines of Theology, to every mind—whatever its age or its degree of intellectual development, and, therefore, without regard to its ability to appreciate, or its right to accept them."

"Let us once for all put an end to misapprehension as to the significance of the phrase, Secular Education. We confess it an incomplete term, as symbols of mere antagonism generally are; and we grant, farther, that doctrines concerning Secular education have also, through effect of opposition, asserted more than they really meant. The true opposition is not between education, Secular and Religious, but between Secular education, Moral and Religious, as rightly designated by the word *Training;* and the attempt to fill the child's memory with Theological dogmas, which, at that time of life, can find no response either from the Heart or Intellect. The question, in its ultimate form, is not a Religious question at all, but one appertaining purely to the science of education. Had the latter science been cultivated in this country, the debates now existing would have been unheard of. Government could take no means more likely to expedite the rational settlement of these problems, than by instituting teachers and professors of scientific Pedagogy through all the great permanent seminaries of the kingdom. Now that the burden of University tests is removed, it is competent for the Crown to institute, to such chairs, persons free from all bondage."

"The considerations now briefly indicated to your Lordship, have sufficed to persuade us, that no educational scheme founded on provisions assuring the introduction into our Common Schools, of Theological or Dogmatic teaching in any form, can ever be a national or permanent one; and uncontaminated by admixture with principles, condemned alike by justice, and an enlightened regard to the prosperity and progress of vital Religion. And the existence of such a project is, at present, the more deeply to be deplored, because its apparent popularity is the only obstacle to the enactment of measures which might ensure the effective diffusion of industrial, intellectual, and moral training through every zone of the population of Scotland. But, my Lord, be not misled by that apparent popularity,—let not sound and far-seeing statesmanship be scared from right and comprehensive action by an over-estimate of the influence, or the mistaken interpretation, of a few unanalysed public meetings. These meetings cannot, as we have said, represent the true principles of the Voluntary Church in this country; and it is becoming every day more manifest, through the resolutions of the presbyteries of that church, that they do not represent them. Your Lordship needs not be informed, that, in all countries, there are great numbers of the Religious laity, who, unless imperatively required to pronounce, are never willing to oppose the clerical body in measures plausibly averred to involve the interests of Religion; and yet, how frequently has history told us, how false would be the inference that the laity approve such measures! This movement, as we are prepared to substantiate, finds small sympathy among the masses of working men in our large cities; and we remind your Lordship, that it is avowedly based on disregard of the religious views of the now important Roman Catholic element of our Scottish population. But a fact still more emphatic is this,—it has received no welcome, it has rather encountered distinct opposition, from by far the most influential portion of the public press in Scotland. Is it possible, my Lord, on any wide consideration of the case, to suppose that the contrary could be true? We have the experience of the world before us; and surely Scotchmen do not draw their origin from another planet than this. On the Continent of Europe, some of the most enlightened nations have drawn the high culture they possess from a system altogether analogous to the one we now propose. In Ireland, under the sanction of the British Government, the system has composed great differences. Why, then, should it not be recognised by our thinking people as certainly capable of reconciling small ones? Or, if it is alleged that the Anglo-Saxon race is marked by peculiarities, observe how it has acted when free. Look to North America; look to our greatest colonies—Canada and Australia:—depend on it, my Lord, that the man who, in face of these great and clear examples, chooses to declare the adoption of our principles impracticable, is either dogmatist or doctrinaire. There may, at present be a slight difference in circumstances; but, under the necessities of modern civilisation, Scotland is rapidly drifting towards the conditions under which those other Anglo-Saxon populations already exist."

3. THE LAST VIEWS OF DR CHALMERS ON NATIONAL EDUCATION AND ITS RELATION TO RELIGION.

REFERRED TO, p. LXII AND p. 204.

It were the best state of things, that we had a Parliament sufficiently theological to discriminate between the right and wrong in Religion, and to encourage or endow accordingly. But failing this, it seems to us the next best thing, that, in any public measure for helping on the education of the people, Government were to abstain from introducing the element of Religion at all into their part of the scheme, and this not because they held the matter to be insignificant—the contrary might be strongly expressed in the preamble of their act; but on the ground that, in the present divided state of the Christian world, they would take no cognisance of, just because they would attempt no control over, the Religion of applicants for aid, leaving this matter entirely to the parties who had to do with the erection and management of the schools which they had been called upon to assist. A grant by the State, upon this footing, might be regarded as being appropriately and exclusively the expression of their value for a good Secular education.

The confinement, for the time being, of any Government measure for schools to this object, we hold to be an imputation, not so much on the present state of our Legislature, as on the present state of the Christian world, now broken up into sects and parties innumerable, and seemingly incapable of any effort for so healing these wretched divisions, as to present the rulers of our country with aught like such a clear and unequivocal majority in favour of what is good and true, as might at once determine them to fix upon and to espouse it.

It is this which has encompassed the Government with difficulties from which we can see no other method of extrication, than the one which we have ventured to suggest. And, as there seems no reason why, because of these unresolved differences, a public measure for the health of all—for the recreation of all—for the economic advancement of all—should be held in abeyance; there seems as little reason why, because of these differences, a public measure for raising the general intelligence of all should be held in abeyance. Let the men, therefore, of all churches and all denominations alike hail such a measure, whether as carried into effect by a good education in letters or in any of the sciences; and, meanwhile, in these very seminaries let that education in Religion, which the Legislature abstains from providing for, be provided for, as freely and amply as as they will, by those who have undertaken the charge of them.

We should hope, as the result of such a scheme, for a most wholesome rivalship on the part of many in the great aim of rearing, on the basis of their respective systems, a moral and Christian population, well taught in the principles and doctrines of the gospel, along with being well taught in the lessons of ordinary scholarship. Although no attempt should be made to regulate or to enforce the lessons of Religion in the inner hall of legislation, this will not prevent, but rather stimulate to a greater earnestness in the contest between truth and falsehood—between light and darkness—in the outer field of society; nor will the result of such a contest in favour of what is right and good be at all the more unlikely, that the families of the land have been raised by the helping hand of the State to a higher platform than before, whether as respects their health, or their physical comfort, or their economic condition, or, last of all, their place in the scale of intelligence and learning.

Religion would, under such a system, be the immediate product, not of legislation, but of the Christian and philanthropic zeal which obtained throughout society at large. But it is well, when what legislation does for the fulfilment of its object tends, not to the impediment, but rather, we apprehend, to the furtherance of those greater and higher objects which are in the contemplation of those whose desires are chiefly set on the immortal well-being of man.

On the basis of these general views, I have two remarks to offer regarding the Government scheme of education:

1. I should not require a certificate of satisfaction with the Religious progress of the scholars from the managers of the schools, in order to their receiving the Government aid. Such a certificate from Unitarians or Catholics implies the direct sanction or countenance by Government to their respective creeds, and the responsibility, not of allowing, but more than this, of requiring that these shall be taught to the children who attend. A bare allowance is but a general toleration; but a requirement involves in it the mischief, and, I would add, the guilt, of an indiscriminate endowment for truth and error.

2. I would suffer parents or natural guardians to select what parts of the education they wanted for their children. I would not force Arithmetic upon them, if all they wanted was Reading and Writing; and as little would I force

the Catechism, or any part of Religious instruction that was given in the schools, if all they wanted was a Secular education. That the managers in the Church of England schools shall have the power to impose their Catechism upon the children of Dissenters, and still more to compel their attendance on church, I regard as amongst the worst parts of the scheme.

The above observations, it will be seen, meet any questions which might be put in regard to the applicability of the scheme to Scotland, or in regard to the use of the Douay version in Roman Catholic schools.

I cannot conclude without expressing my despair of any great or general good being effected in the way of Christianising our population, but through the medium of a government themselves Christian, and endowing the true Religion; which I hold to be their imperative duty, not because it is the Religion of the many, but because it is true.

The endowment of the Catholic Religion by the State, I should deprecate, as being ruinous to the country in all its interests. Still I do not look for the general Christianity of the people, but through the medium of the Christianity of their rulers. This is a lesson taught historically in Scripture, by what we read of the influence which the personal character of the Jewish monarchs held on the Moral and Religious state of their subjects; it is taught experimentally by the impotence, now fully established, of the Voluntary principle; and last and most decisive of all, it is taught prophetically in the book of Revelation, when told that then will the kingdoms of the earth (*Basileiai*, or governing powers) become the kingdoms of our Lord Jesus Christ, or the Governments of the earth become Christian Governments.[1]

THOMAS CHALMERS.

No. VI.—LIST OF MEDICAL MEN WHO SIGNED THE MEDICAL OPINION ON THE IMPORTANCE OF TEACHING PHYSIOLOGY AND THE LAWS OF HEALTH IN COMMON SCHOOLS, IN 1853.

REFERRED TO, p. 99.

Thomas Addison, M.D., Senior Physician, and Lecturer on the Practice of Physic, Guy's Hospital, &c.

James Alderson, M.D., F.R.S., Fellow, Curator, and Lumleian Lecturer to the Royal College of Physicians.

J. Moncrieff Arnott, F.R.S., Member of the Council and of the Court of Examiners of the Royal College of Surgeons, &c.

Neil Arnott, M.D., F.R.S., Physician Extraordinary to the Queen, Member of the Senate of the University of London.

Benjamin Guy Babington, M.D., F.R.S., Physician to Guy's Hospital, &c.

T. Graham Balfour, M.D., Surgeon, Royal Military Asylum.

William Baly, M.D., Lecturer on Forensic Medicine at St Bartholomew's Hospital, &c.

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[1] The above was written during the journey to London which preceded Dr Chalmers' death in 1847, after the issue of the celebrated Minutes of the Privy Council on Education, in 1846, which are referred to. It is quoted with approbation by Professor Nichol, in his edition of Willm's "Education of the People," p. lxxxi. (Glasgow, William Lang. 1847.)

Archibald Billing, M.D., F.R.S., Member of the Senate and Examiner in Medicine, University of London, &c.

Golding Bird, M.D., F.R.S., Professor of Materia Medica and Assistant Physician to Guy's Hospital, &c.

Francis Boott, M.D., Member of the Council of University College.

W. Bowman, F.R.S., Professor of Anatomy and Physiology at King's College, &c.

Richard Bright, M.D., F.R.S., Physician Extraordinary to the Queen, Consulting Physician to Guy's Hospital, &c.

Sir Benjamin C. Brodie, Bart., D.C.L., F.R.S., Sergeant Surgeon to the Queen, Surgeon to H.R.H. Prince Albert, &c.

George Budd, M.D., F.R.S., Professor of Medicine at King's College, and Physician to King's College Hospital.

Sir William Burnett, M.D., K.C.B., and K.C.H., F.R.S., Director-General of Naval Hospitals and Fleets.

George Burrows, M.D., F.R.S., Physician to St Bartholomew's Hospital, &c.

Wm. B. Carpenter, M.D., F.R.S., Examiner in Physiology, &c., University of London, Professor of Forensic Medicine at University College.

Sir James Clark, Bart., M.A., M.D., F.R.S., Physician in Ordinary to the Queen and to H.R.H. Prince Albert, &c.

James Copland, M.D., F.R.S., President of the Royal Medical and Chirurgical Society.

John Davy, M.D., F.R.S., Inspector-General of Army Hospitals.

John E. Erichsen, F.R.C.S., Professor of Surgery, University College, and Surgeon to University College Hospital.

William Farr, M.D., of Registrar-General's Office.

Robert Ferguson, M.D., Physician Accoucheur to the Queen, &c.

William Fergusson, F.R.S., Professor of Surgery at King's College, Surgeon in Ordinary to H.R.H. Prince Albert, &c.

John Forbes, M.D., D.C.L., F.R.S., Physician in Ordinary to H.M. Household, Physician Extraordinary to H.R.H. Prince Albert, &c.

R. D. Grainger, F.R.S., Lecturer on Physiology at St Thomas's Hospital.

William Augustus Guy, M.B., Physician to King's College Hospital, Professor of Forensic Medicine at King's College.

Cæsar H. Hawkins, President of Royal College of Surgeons, Surgeon to St George's Hospital, &c.

Francis Hawkins, M.D., Registrar of Royal College of Physicians, and Physician to Middlesex Hospital.

Thomas Hodgkin, M.D., Member of the Senate of the University of London.

Joseph Hodgson, F.R.S., Member of Council of Royal College of Surgeons, Examiner in Surgery in University of London.

Sir Henry Holland, Bart., M.D., F.R.S., Physician in Ordinary to the Queen and H.R.H. Prince Albert.

William Jenner, M.D., Professor of Pathological Anatomy at University College.

H. Bence Jones, M.A., M.D., F.R.S., Physician to St George's Hospital.

Francis Kiernan, F.R.S., Member of Senate and Examiner in Anatomy and Physiology, University of London.

P. M. Latham, M.D., Physician Extraordinary to the Queen.

William Lawrence, F.R.S., Surgeon Extraordinary to the Queen, and Examiner, Royal College of Surgeons.

Charles Locock, M.D., First Physician Accoucheur to the Queen, &c.

Thomas Mayo, F.R.S., Physician to St Marylebone Infirmary.

Richard Owen, F.R.S., Hunterian Professor of Physiology to the Royal College of Surgeons, &c.

James Paget, F.R.S., Assistant Surgeon and Lecturer on Physiology at Bartholomew's Hospital, &c.

John Ayrton Paris, M.D., F.R.S., President of the Royal College of Physicians.

E. A. Parkes, M.D., Professor of Clinical Medicine, University College, Physician to University College Hospital, &c.

Richard Partridge, Professor of Anatomy and Physiology, King's College, Surgeon to King's College Hospital, &c.

Richard Quain, F.R.S., Surgeon to University College Hospital.

G. Owen Rees, M.D., F.R.S., Assistant Physician and Lecturer on Materia Medica at Guy's Hospital.

Edward Rigby, M.D., Examiner in Midwifery to the University of London.

P. M. Roget, M.D., F.R.S., Member of Senate of University of London, Author of "Bridgewater Treatise on Physiology," &c.

H. S. Roots, M.D., F.R.S., Consulting Physician to St Thomas's Hospital.

John Scott, M.D., Examining Physician to the East India Company.

Edward James Seymour, M.A., M.D., F.R.S., formerly Physician to St George's Hospital.

William Sharpey, M.D., F.R.S., Professor of Physiology, University College Examiner in Physiology, University of London.

Alexander Shaw, Surgeon, and Lecturer on Surgery to Middlesex Hospital.

Andrew Smith, M.D., Director-General, Army Medical Department.

T. Southwood Smith, M.D., Physician to London Fever Hospital, and Member of General Board of Health.

H. H. Southey, M.D., D.C.L., F.R.S., Gresham Professor of Medicine.

Edward Stanley, F.R.S., Surgeon to St Bartholomew's Hospital.

R. Bentley Todd, M.D., F.R.S., Professor of Physiology at King's College, Physician to King's College Hospital.

Benjamin Travers, F.R.S., Surgeon Extraordinary to the Queen, and Surgeon in Ordinary to H.R.H. Prince Albert.

Alex. Tweedie, M.D., F.R.S., Physician to London Fever Hospital, Examiner in Medicine to University of London, &c.

W. H. Walshe, M.D., Professor of Medicine at University College, and Physician to University College Hospital.

Thomas Watson, M.D., Consulting Physician to King's College Hospital.

Charles West, M.D., Physician Accoucheur, and Lecturer on Midwifery at St Bartholomew's Hospital.

C. J. B. Williams, M.D., F.R.S., late Professor of Medicine at University College, and Physician at University College Hospital.

James Arthur Wilson, M.D., Senior Physician to St George's Hospital.

LONDON, *March* 1853.

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